RECORD OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

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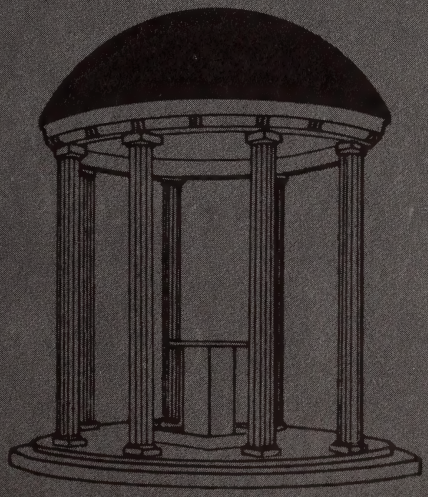
RESEARCH: A RECORD OF SCHOLARSHIP AND PUBLICATION



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RESEARCH:
A RECORD OF SCHOLARSHIP AND PUBLICATION

January, 1971-December, 1972

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FOREWORD

Research: A Record of Scholarship and Publication records the scholarly and creative activities of the faculty and graduate students at The University of North Carolina at Chapel Hill. This forty-fourth issue covers the period from January 1, 1970 through December 31, 1972.

The volume is divided into four sections, Part I, the largest section of the book, reports the activities of the regular academic staff. It is a record of the research publications and other activities of the academic faculty and of the dissertations and theses directed by the members of the faculty. Part II describes the nature of various research organizations in the University—specialized laboratories, institutes, and centers—which broaden the resources and enrich the research activities of the various academic departments and their faculties. In some cases, publications of members of institutes are included here rather than under a department. Part III summarizes the program of research societies in which members from a number of different departments participate. Part IV records the contents of a number of publications sponsored wholly or in part by the University and also lists the publications of the University of North Carolina Press.

This volume was prepared in the Office of Research Administration with the valuable assistance of Mrs. Martha Fahrer and Mrs. Jean Madonna. The editor also wishes to acknowledge the assistance of Mrs. Mary Johnson whose editorial skills aided greatly in the preparation of this volume.

GEORGE R. HOLCOMB
Dean of Research Administration

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PART I

RESEARCH BY DEPARTMENTS

DEPARTMENT OF ANATOMY

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ROY PEACH

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PETER PETRUSZ

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MARY CLYDE SINGLETON

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JULIA GORHAM CRANE

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JOHN GULICK

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FREDERICK DEAN MCEVOY

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JOHN FORDYCE MARSHALL

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DISSERTATIONS AND THESES

The following doctoral dissertations were completed under the direction of the department:

MICHAEL VINCENT ANGROSINO

Outside is Death: Alcoholism, Ideology and Community Organization Among the East Indians of Trinidad. (1972, under the direction of JULIA GORHAM CRANE.)

FRANCES NORTHEND FERGUSON

A Stake in Society: Its Relevance to Response By Navajo Alcoholics In A Treatment Program (1972, under the direction of JOHN JOSEPH HONIGMANN.)

LELAND GREER FERGUSON

South Appalachian Mississippian. (1971, under the direction of JOFFRE LANNING COE.)

MARY CACAVIATON GUTENSCHWAGER

Nea Aeolia: Persistence of Tradition in an Urban Greek Community. (1971, under the direction of JAMES LOWE PEACOCK, III.)

CRAIG ERNEST HENRICKSON

Acculturation, Value Change, and Mental Health Among the Navajo. (1971, under the direction of RALPH C. PATRICK.)

DAVID MERRITT JOHNSON

Cultural Homogeneity and Occupational Multiplicity Among Trinidadian Fishermen. (1972, under the direction of JULIA GORHAM CRANE.)

WILLIAM WARREN KOOLAGE, JR.

Adaptation of Chipewyan Indians and Other Persons of Native Background in Churchill, Manitoba. (1971, under the direction of JOHN JOSEPH HONIGMANN.)

FRANK EDWARD MANNING

Black Clubs in Bermuda: A Study of Play and Social Thought. (1972, under the direction of JAMES LOWE PEACOCK, III.)

JOHN GREGORY PECK

Urban Station: Migration Patterns of the Lumbee Indians. (1972, under the direction of DOROTHEA C. LEIGHTON.)

RICHARD JOSEPH PRESTON, III

Cree Narration: An Expression of Personal Meanings of Events. (1971, under the direction of JOHN JOSEPH HONIGMANN.)

JAMES NELSON RILEY

Family Organization and Population Dynamics in a Central Thai Village. (1972, under the direction of STEVEN POLGAR.)

ROSEMARY COCHRAN SHARP

Greca: An Exploratory Study of Relationships Between Art, Society and Personality. (1972, under the direction of DONALD LESLIE BROCKINGTON.)

HELEN JEAN COLEMAN WIESE

The Interaction of Western and Indigenous Medicine in Haiti in Regard to Tuberculosis. (1972, under the direction of RALPH C. PATRICK.)

The following masters theses were completed under the direction of the department:

SUSAN ABBOTT

A Proposal for Ethnographic Research to be Carried Out on the Duck Valley Indian Reservation, Idaho and Nevada. (1971, under the direction of PETER RANDALL GOETHALS.)

DONNA LEE BARCOTT

Sociocultural Stress Factors Among Adolescents. (1972, under the direction of DOROTHEA C. LEIGHTON.)

DOUGLAS WESLEY BOYCE

Tuscarora Political Organization, 1650-1713. (1971, under the direction of FREDERICK DEAN MCEVOY.)

JANE BRANDFON

Compound and Coordinate Bilingualism: A Critical Appraisal. (1972, under the direction of RAYMOND FREDERIC HAFER.)

VALLETTA KAY CANOUTS

Towards a Reconstruction of Creek and Pre-Creek Cultual Ecology. (1971, under the direction of JOFFRE LANNING COE.)

DANA LEE DAVIS

Biological, Demographic and Cultural Factors in Twinning Frequencies. (1971, under the direction of WILLIAM SPROTT POLLITZER.)

DOROTHY IRENE DAVIS

A Cross-Cultural Study of Beliefs and Attitudes Surrounding Twin Births Viewed from an Ecological Perspective. (1971, under the direction of STEVEN POLGAR.)

MICHAEL LAWRENCE FREIBERG

Presentation of Self and Social Interaction Among East Indian Students. (1972, under the direction of TERENCE MICHAEL STEVEN EVENS.)

GEORGE RAYMOND GAMBLE

Compensating Birth Behavior in Iran: Examination of a Hypothesis. (1972, under the direction of STEVEN POLGAR.)

BARBARA MARY GORTYCH

Innovation and Tradition in Leadership Roles: A Comparison of Tubman and Sukarno. (1972, under the direction of JAMES LOWE PEACOCK, III.)

CHRISTOPHER JOHN GROSSMITH

Modernization and Natality in Moslem Macedonia. (1971, under the direction of STEVEN POLGAR.)

LAWRENCE WILLIAM HALL, JR.

Great Whale River Eskimo Youth: Enculturation into the Northern Town Life. (1971, under the direction of JOHN JOSEPH HONIGMANN.)

MAYLING SIMPSON HEBERT

The Social Isolation of Irish Travellers and Concomitant Barriers to Gene Flow. (1971, under the direction of WILLIAM SPROTT POLLITZER.)

PAGE DAY HOLMES

An Analysis of Horsetrading Narratives. (1972, under the direction of JAMES LOWE PEACOCK.)

BEVERLEY MCELLIGOTT HURLBERT

Social and Religious Change in a Southern Neighborhood. (1972, under the direction of JULIA GORHAM CRANE.)

MARIA NATALIA JORRIN

Carved Stone Monuments from the Coast of Oaxaca. (1972, under the direction of DONALD LESLIE BROCKINGTON.)

ELEANOR LYNN KAY

Considerations of a Research Design to Measure Conflict among Nurses who Provide Abortion. (1971, under the direction of FREDERICK DEAN MCEVOY.)

CAROLYN MARY KOTLAS

Black-White Relations in a Southern Church and Community Center. (1972, under the direction of SHIRLEY HILL WITT.)

ROCHELLE HARRIET LEVY

An Ethnographic Sketch of the Great Bear Lake Indians, Fort Franklin, Northwest Territories. (1971, under the direction of JOHN JOSEPH HONIGMANN.)

CHARLES WILLIAM MARKMAN

The Calendar of the Lozicho Villages: The Culture and History of a Present Day Mesoamerican Ceremonial Calen-

dar. (1971, under the direction of DONALD LESLIE BROCKINGTON.)

VIRGIL DEAN MIEDEMA

Aspects of the Nepalese Kinship System. (1971, under the direction of PETER RANDALL GOETHALS.)

ALEXANDER HENDERSON MORRISON II

The Direct Historical Approach in American Archaeology. (1972, under the direction of JOFFRE LANNING COE.)

ROBERT AMORY MYERS

A Social History of Dominica. (1972, under the direction of JULIA GORHAM CRANE.)

LINNEA CAROL OHGREN

The Disappearance of Shamanism in Central Eskimo Groups. (1971, under the direction of RALPH CLINTON PATRICK.)

EDWARD JEROME SMITH

A Proposal for the Study of Legal Perceptions in Rural North Carolina. (1972, under the direction of JULIA GORHAM CRANE.)

ISABEL JANET BRUMAGHIM TERRY

The West Indies Federation. (1972, under the direction of JULIA GORHAM CRANE.)

LAURA ANNE GREER VICK

Personal Preferences for Interindividual Bonds in a Lemur Troop. (1972, under the direction of WILLIAM SPROTT POLLITZER.)

SHARLOTTE KATHLEEN NEELY WILLIAMS

The Role of Formal Education among the Eastern Cherokee Indians 1880-1971. (1971, under the direction of JOHN JOSEPH HONIGMANN.)

DEPARTMENT OF ART

ROBERT JOHN BARNARD

"Leger and Purist Paris," *Art Education Journal,* 25 (January 1972), 38-40.

Review of "*Painters on Painting* by Eric Protter, "*Art Education Journal,* 24 (June 1971), 25.

Review of "Framing by E.Toscano," *Art Education Journal,* 24 (November 1971), 37.

Review of "Joseph Albers by Werner Spies," *Art Education Journal,* 25 (December 1972), 28-30.

North Carolina Artists Exhibition, Raleigh North Carolina, November 1972.

One-Man Show, Alamance Art Association, Burlington, North Carolina, October, 1972.

School of Public Health Exhibition, Chapel Hill, Howard Thomas Memorial Award, February, 1972.

One Man Exhibition, Alamance Art Association, Burlington, North Carolina, November, 1971.

North Carolina Artists Exhibition, Raleigh, North Carolina, November, 1971.

James River Juried Art Exhibition, Norfolk, Virginia, October, 1971.

The University of North Carolina Art Department Faculty Exhibition, Chapel Hill, N. C., September, 1971.

School of Public Health Exhibition, Chapel Hill, N. C., Honorable Mention, February, 1971.

JAROSLAV T. FOLDA

Co-editor of the catalogue and author of 16 entries in *A Medieval Treasury from Southeastern Collections* (Ackland Museum, Chapel Hill, 1971), pp. 2, 3, 6, 8, 9, 19-23, 25, 30, 31, 45, 54, 63, 68, and 77.

"Crucifix. French (Limoges, Abbey of Grandmont) ca. 1185," *Ackland Notes,* No. 7 (Ackland Museum, 1972).

Review of M. Barasch, *Crusader Figural Sculpture in the Holy Land* (New Brunswick: Rutgers University Press, 1971), in the *Library Journal,* 97 (1972), 1306.

Review of L. B. Philip, *The Ghent Altarpiece and the Art of Jan van Eyck* (Princeton: Princeton University Press, 1972), in the *Library Journal,* 97 (1972), 2178.

Review of H. Lehmann-Haupt, ed., *The Gottingen Model Book* (Columbia: University of Missouri Press, 1972) in the *Library Journal,* 97 (1972), 2565.

Review of P. du Bourguet, *Early Christian Art* (New York: Morrow and Co. — Reynal, 1971) in the *Library Journal,* 97 (1972), 3981.

SARA ANDERSON IMMERWAHR

The Neolithic and Bronze Ages—The Athenian Agora, Re-

sults of Excavations conducted by the American School of Classical Studies at Athens, Volume XIII. Princeton, New Jersey: Princeton University Press, 1971, Pp. xx, 286, pls. 92.

Review of Bert Hodge Hill, *Temple of Zeus at Nemea* (Princeton: Princeton University Press, 1966) in *The Art Bulletin,* 53 (June, 1971), 242.

Review of Rhys Carpenter ,*The Architects of the Parthenon* (Baltimore: Penguin Books, 1970), in *Southeast College Art Review and Newsletter* V, 2 (April, 1972), 12-13.

GEORGE KACHERGIS

Thirty-fourth Annual North Carolina Artists Exhibition, North Carolina Museum of Art, Raleigh, North Carolina, 1971.

RICHARD W. KINNAIRD

Public Health Painting and Sculpture Exhibition, Chapel Hill, N. C., 1971.

Painting and Sculpture Exhibition at the Mint Museum, Charlotte, N. C., 1971.

One-Man Show at Greensboro College, Greensboro, N. C., 1971.

Public Health Painting and Sculpture Exhibition (North Carolina National Bank Purchase Award), Chapel Hill, N. C., 1972.

One-Man Show of Painting and Sculpture, Greenville, N. C., 1972.

One-Man Show at Davidson College, Davidson, N. C., 1972.

Two-Man Show, Chapel Hill, N. C., 1972.

Restoration of pediment sculpture of Mint Museum, Charlotte, N. C., 1972.

Art on Paper Annual (Dillard Purchase Award), Greensboro, N .C., 1972.

35th Annual North Carolina Artists Exhibition, Purchase Award, Raleigh, N. C., 1972.

DONALD BURTON KUSPIT

"The Illusion of the Absolute in Abstract Art," *Art Journal,* XXX (1971). 26-30.

"The Art of Reductionism: Wittgensteinean Aspects of Minimal Art." *Main Currents in Modern Thought,* XXIX (1972), 21-27.

"The Self-Portrait As A Clue To The Artist's Being-in-

the-World," *Proceedings of the Sixth International Congress in Aesthetics,* (Uppsala, Sweden, 1972), 237-45.

"Dürer's Scientific Side," *Art Journal,* XXXI, (Winter 1972), 163-171.

Review of *Aesthetics and Aisthesos, Proceedings of the Fourth Lexington Conference on Phenomenology,* in *The Human Context,* IV (1972), 197-99.

KENNETH NESS

"Art is Where You Mind It." An experimental film; shown in the Ackland auditorium, May, 1971, November, 1972.

University of North Carolina Art Department Faculty Exhibitions, Ackland Art Center, Chapel Hill, N .C., 1971, 1972.

MARVIN SALTZMAN

University of North Carolina Art Department Faculty Exhibitions, Ackland Art Center, Chapel Hill, N. C., 1971, 1972.

Faculty Choice, Blacksburg, Virginia, 1972.

One-Man Show, Art Gallery of Chapel Hill, 1972.

JOSEPH CURTIS SLOANE

"Currents in 19th Century French Painting" in *Selections from the Norton Simon, Inc. Museum of Art,* ed. David W. Steadman. Princeton, N. J.: Princeton University Press, 1972. Pp. 65-67.

"What Are We Waiting For?" *The North Carolina Music Educator,* 21 (March 1972), 18-19.

Review of Anita Brookner, *The Genius of the Future. Studies in French Art Criticism: Diderot, Stendhal, Baudelaire, Zola, The Brothers, Gericourt, Hysmans* (London/New York: Phaidon, 1970), in *Art Bulletin,* 54 (December 1972), 559-60.

Review of *The Appalachian Photographs of Doris Ulmann,* Remembrance by John Jacob Niles, Preface by Jonathan Williams (Penland, N. C.: Jargon Press, 1972), in *Art Journal,* 31 (Spring 1972), 352.

GEORGE W. WHEELOCK

33rd Annual North Carolina Artists Exhibition, North Carolina Museum of Art, Raleigh, N. C., December-January, 1971.

1971 Annual Juried Art Exhibition, School of Public Health, Chapel Hill, N. C., February-December, 1971.

16th Annual Juried Art Exhibition, Allied Art Center, Durham, N. C., February-March, 1971.

Ackland Art Center, Chapel Hill, N. C., May-June, 1971.

35th Annual Southeastern Juried Exhibition, Salem College Fine Arts Center, October, 1971.

13th Annual Springs Art Juried Exhibition, Lancaster, South Carolina, October, 1971.

Columbia Museum of Art, Columbia, South Carolina, January, 1972.

St. Johns Art Gallery, Wilmington, North Carolina, January-February, 1972.

Asheville Art Museum, Asheville, North Carolina, February-March, 1972.

The Hickory Museum of Art, Hickory, North Carolina, March-April, 1972.

Mai Rutledge Building, Winthrop College, Rock Hill, South Carolina, April-May, 1972.

Gibbes Art Gallery, Charleston, South Carolina, May, 1972.

Greenville County Museum of Art, Greenville, South Carolina, July, 1972.

Randolph Lee Gallery, Clemson University, Clemson, South Carolina, August, 1972.

Augusta College Performing Arts Building, Augusta, Georgia, August-September, 1972.

The Gallery of Contemporary Art, Winston-Salem, North Carolina, One-Man Show, September, 1972.

East Carolina University, School of Art, Greenville, North Carolina, September-October, 1972.

James River Juried The Mariners Museum, Newport News, Virginia, October-November, 1972.

South Carolina State College, Orangeburg, South Carolina, November, 1972.

14th Annual Springs Art Juried Exhibition, Lancaster, South Carolina, October, 1972.

Millikin Fine Arts Building, Converse College Spartanburg, South Carolina, November-December, 1972.

DENNIS ZABOROWSKI

University of North Carolina, Department of Art Faculty Art Show, Ackland Art Center, 1971.

Spring Mills Art Exhibition, 1972.

Thirty-third and Thirty-fourth North Carolina Artists Exhibition, 1971, 1972.

Thirty-fifth Semi-Annual Southeastern Exhibit, 1971.

Invitational Art Exhibit, "Faculty Choice," February 2-March 5, 1971.

9th Annual Art Exhibitions University of North Carolina School of Public Health, 1971.

11th Annual Art Exhibitions, University of North Carolina School of Public Health, 1971.

One-Man Exhibit, North Carolina National Bank, Raleigh, N. C., February 7-March 27, 1971.

One-Man Exhibit, Gallery of Contemporary Art, Winston-Salem, N. C., February, 1972.

Three-Man Exhibit, Washington and Lee University, March 1-27, 1971.

Thirty-fifth Annual Art Exhibition, North Carolina Museum of Art, December, 1972.

Theses

The following masters' theses were completed under the direction of the department:

Rene Daniel Brooks

The Watercolors of John Singer Sargent. (1969, under the direction of Joseph Curtis Sloane.)

Ellen Frederica Dewald

Italian Painting of the Sixteenth Century (1518-1594): An Examination of Some of Its Conceptual and Visual Meanings. (Spring, 1971, under the direction of Donald B. Kuspit.)

Frank Faulner

"On My Art". (1971, M.F.A., under the direction of George Kachergis.)

Mary Harris

The Art Program at Black Mountain College. (1972, under the direction of John Volney Allcott.)

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

KENNETH BOTT

(With Gary A. Wilson.) "Use of Transformation and Transfection in *Bacillus subtilis* to Characterize the Mechansim of Nalidixic Acid Inhibition," in *Informative Molecules in Biological Systems,* ed., L. G. H. Ledoux, Amsterdam, Holland: North-Holland Publishing Company, 1971. Pp. 39-50.

"Acrylamide Gel Electrophoresis of Intecellular Enzymes during Early Stages of Sporulation in *Bacillus subtilis," Journal of Bacteriology,* 108 (November 1971), 720-32.

(With Jeffrey L. Doering.) "Differential Amino Acid Requirements for Sporulation in *Bacillus subtilis," Journal of Bacteriology,* 112 (October 1972), 345-55.

(With C. C. Field.) "Differential Effects of Acridine Orange and Actinomycin D on Outgrowth and Phage Infected Spores of *Bacillus subtilis," Bacteriological Proceedings,* (April 1971), 242.

(With J. L. Doering.) "Differential Amino Acid Requirements for Sporulation in *Bacillus subtilis," Bacteriological Proceedings,* (April 1972), G160.

WALLACE ALEXANDER CLYDE, JR.

(See entries under Department of Pediatrics.)

WILLIAM JAMES CROMARTIE

(With C. H. Yang.) "Relation of Experimental Arthritis in Rats to Localization of Group A Streptococcal Cell Walls," *Federation Proceedings,* 29, No. 2 (March-April 1970), p. 100.

MARSHALL HALL EDGELL

(With C. A. Hutchison, III.) "Genetic Assay for Small Fragments of Bacteriophage X174 DNA," *Journal of Virology,* 8, (August 1971), 181-89.

(With C. A. Hutchison, III and H. M. Sclair.) "Endonuclease R Fragments of Bacteriophage X174 DNA," *Journal of Virology,* 9, (April 1972), 574-82.

(With J. H. Middleton and C. A. Hutchison, III.) "Specific Fragments of X174 Deoxyribonucleic Acid Produced by a Restriction Enzyme from *Haemophilus aegyptius,* Endonuclease Z," *Journal of Virology,* 10, (July 1972), 42-50.

JANET JORDAN FISCHER

(See entries under Department of Medicine.)

JAMES DONALD FOLDS

(With A. B. Stavitsky.) "Enchanced Protein and IgM and IgG Antibody Synthesis Following an Early Second Injection of Hemocyanin into the Rabbit," *Journal of Immunology,* 106 (1971), 383-91.

(With T. L. Roszman and A. B. Stavitsky.) "A Kinetic and Quantitative Analysis of Antibody and Protein Synthesis During the Primary Response to Keyhole Limpet Hemocyanin", *Immunology,* 20 (May 1971), 1041-53.

(With T. L. Roszman and A. B. Stavitsky.) "Distinction Between Rabbit Lymph Node Cell Populations Responding to Primary and Secondary Injection of Keyhole Limpet Hemocyanin," *Journal of Cell Physiology,* 77 (June 1971), 401-10.

(With A. B. Stavitsky.) "The Differential Localization of Antibody Synthesis of Immunological Memory in Lymph Nodes Draining and Not Draining the Site of Primary Immunization with Hemocyanin," *Journal of Immunology,* 108 (1972), 152-60.

(With I. R. H. Welsh and J. K. Spitznagel.) "Neutral Proteases Confined to One Class of Lysosomes of Human Polymorphonuclear Leukocytes," *Proceedings of the Society for Experimental Biology and Medicine,* 139 (February 1972), 461-63.

HARRY GOODER

(With Z. A. McGee and R. G. Wittler and P. Charache.) "Wall-Defective Microbial Variants: Terminology and Experimental Design," *Journal of Infectious Diseases,* 123 (April 1971), 433-38.

(With P. B. Wyrick.) "Filterability of Streptococcal L-Forms," *Journal of Bacteriology,* 105 (January 1971), 284-90.

(With P. B. Wyrick.) "Growth of Streptococcal Protoplasts and L-Colonies on Membrane Filters," *Journal of Bacteriology,* 105 (February 1971), 646-56.

(With G. H. Luginbuhl.) "Biochemistry and Genetics of Galactose Metabolism in a Group H Streptococcus Strain Challis, "*Journal of Bacteriology,* 109 (February 1972), 512-19.

GEOFFREY HAUGHTON

(With J. Haot and L. Revesz.) "Characterization of Small Size Lymphoid Cells in Irradiated and Normal Mouse Bone Marrow," *Experimental Cell Research,* 66 (1971), 171-76.

(With J. L. Wagner.) "Immunosuppression by Antilymphocyte Serum and Its Effect on Tumors Induced by 3-Methylcholanthrene in Mice," *Journal of the National Cancer Institute,* 46 (1971), 1-10.

(With W. J. DeAngelis and M. Y. Cooper.) "Detection and Measurement of Weak Histoincompatibilities by Transfer of Mouse Peritoneal Exudate Cells," *Proceedings Symposium Immunogenetics of the H-2 System,* Karger, Basel (1971), 305-15.

(With W. J. DeAngelis.) "Detection of Weak Histocompatibility Antigens on Mouse Peritoneal Macrophages," *Transplantation Proceedings,* 3 (March 1971), 202-6.

"Specific Immunosuppression by Minute Doses of Passive Antibody, III. Reversal of Suppression by Peritoneal Exduate Cells from Immune Animals," *Cellular Immunology,* 2 (1971), 567-82.

"Expression of Histocompatibility Antigens on Tumor Cell Membranes, Introduction: Biological Features of Cell Surface Antigens," *Transplantation Proceedings,* 3 (September 1971), 1147-49.

CLYDE A. HUTCHISON, III

(With R. M. Benbow, J. D. Fabricant and R. L. Sinsheimer.) "Genetic Map of Bacteriophage X174," *Journal of Virology,* 7 (March 1971), 549-58.

(With R. L. Sinsheimer.) "Requirement of Protein Synthesis for Bacteriophage X174 Superinfection Exclusion," *Journal of Virology,* 8 (April 1971), 121-24.

(With M. H. Edgell.) "Genetic Assay for Small Fragments of Bacteriophage X174 DNA," *Journal of Virology,* 8 (August 1971), 181-89.

(With J. S. Pagano.) "Small Circular Viral DNA: Preparation and Analysis of SV40 and X174 DNA," *Methods in Virology,* V (1971), 79-123.

(With M. H. Edgell and M. H. Sclair.) "Endonuclease R Fragments of Bacteriophage X174 DNA," *Journal of Virology,* 9 (April 1972), 572-82.

(With J. H. Middleton and M. H. Edgell.) "Specific Fragments of X174 Deoxyribonucleic Acid Produced by a Re-

striction Enzyme from *Haemophilus aegyptius,* Endonuclease Z," *Journal of Virology,* 10 (July 1972), 42-50.

GEORGE PHILIP MANIRE

(With A. Tamura, A. Matsumoto and N. Higashi.) "Electron Microscopic Observations on the Structure of the Envelopes of Mature Elementary Bodies and Developmental Reticulate Forms of *Chlamydia psittaci,*" *Journal of Bacteriology,* 105 (January 1971), 355-60.

JOHN D. NEWBOLD

(With R. A. Weinberg, Z. Ben-Ishai.) "Poly A Associated with SV40 Messenger RNA," *Nature New Biology,* 238 (July 26, 1972), 111-13.

MEIHAN NONOYAMA

(With J. S. Pagano.) "Detection of Epstein-Barr Viral Genome in Nonproductive Cells," *Nature New Biology,* 233 (September 1971), 103-6.

(With J. S. Pagano.) "Replication of Viral DNA and Breakdown of Cellular DNA in Epstein-Barr Virus Infection," *Journal of Virology,* (1972), 714.

(With J. S. Pagano.) "Separation of Epstein-Barr Virus DNA from Large Chromosomal DNA in Non-Virus Producting Cells," *Nature New Biology,* 238 (1972), 169.

(With E. S. Huang, J. S. Pagano.) "Structure and Function of the Polypetides in Simian Virus 40. II Transcription of Subviral Deoxynucleo-Protein Complex *in vitro,*" *Journal of Virology,* 9 (June 1972), 930-37.

(With P. Gerber, S. Lucas, E. Perlin, B. E. Goldstein.) "Oral Excretion of Epstein-Barr Virus by Healthy Subjects and Patients with Infectious Mononucleosis," *Lancet,* 2 (1972), 988.

JOSEPH S. PAGANO

(See entries under Department of Medicine.)

JOHN HARRIS SCHWAB

"Anti-nuclear Autoantibody in Mice Immunized with Streptococcal Membranes," *Bacteriological Proceedings,* (May 1971), 84.

(With H. R. Gaumer.) "Depression of Bone Marrow Functions in Mice by a Streptococcal Component," *Federation Proceedings,* 30 (April 1971), 649.

"Heart Autoantibodies in Mice," *Circulation XLIV,* No. 4, Sup. II (November 1971), 106.

(With A. H. Malakian.) "Biological Characterization of an Immunosuppressant from Group A. Streptococci," *Journal of Experimental Medicine,* 137 (November 1, 1971), 1253-65.

(With H. R. Gaumer.) "Differential Susceptibility of Mouse Lymphocytes to an Immunosuppressant from Group A Streptococci," *Cellular Immunology,* 4 (August 1972), 394-406.

DAVID GORDON SHARP

(With P. M. McGuire.) "The Composition of a Population of Vaccinia Virions," *Proceedings of the Society for Experimental Biology and Medicine,* 139 (February 1972), 587-91.

MYRON S. SILVERMAN

(See entries under School of Dentistry.)

PHILIP FREDERICK SPARLING

(See entries under Department of Medicine.)

JOHN KEITH SPITZNAGEL

"Sorting Out Lysosomes and Other Cytoplasmic Granules from Polymorphs of Rabbits and Humans: A Search for Antibacterial Factors," In *Phagocytic Mechanisms and Their Relationship to the Rheumatic Diseases,* eds., Williams and Fudenberg. New York: Intercontinental Book Corp., 1972. Pp. 83-106.

(With L. A. Wilson.) "Characteristics of Complement-dependent Release of Phospholipid from *Escherichia coli,*" *Infection and Immunity,* 4 (July 1971), 23-28.

(With I. R. H. Welsh.) "Distribution of Lysosmal Enzymes, Cationic Proteins and Bactericidal Substances in Subcellular Fractions of Human Polymorphonuclear Leukocytes," *Infection and Immunity,* 4 (August 1971), 97-102.

(With J. D. Folds and I. R. H. Welsh.) "Neutral Proteases Confined to One Class of Lysosomes of Human Polymorphonuclear Leukocytes," *Proceedings of the Society for Experimental Biology and Medicine,* 139 (February 1971), 461-63.

(With Kay Brune, M. S. Leffell.) "Microbial Activity of Peroxidaseless Chicken Heterophile Leukocytes," *Infection*

and Immunity, 5 (March 1972), 283-287.

(With J. M. Stark.) "Immunogenicity of Bovine Serum Albumin and Its Oligopolymers in CBA Mice," *Journal of Immunology,* 108 (March 1972), 800-806.

(With M. S. Leffell.) "Association of Lactoferrin with Lysozme in Granules of Human Polymorphonuclear Leukocytes," *Infection and Immunity,* 6 (November 1972), 761-65.

WILLIAM RINGGOLD STRAUGHN, JR.

(With Ann W. Baxter.) "A Mutant of *Streptococcus faecium (faecalis)* F24 with Reduced Permeability to Arginine and Citrulline," *Bacteriological Proceedings,* (May 1971), 219.

ROBERT TWAROG

"Enzymes of the Isoleucine-Valine Pathway in *Acinetobacter," Journal of Bacteriology,* 111 (July 1972), 37-46.

(With E. N. Baskerville.) "Regulation of the Tryptophan Synthetic Enzymes in *Clostridium butyricum," Journal of Bacteriology,* 112 (October 1972), 304-14.

(With R. A. Jensen.) "Allostery of 3-Deoxy-D-arabino-Heptulosonate 7-Phosphate Synthetase in *Clostridiums:* Another conserved Generic Characteristic," *Journal of Bacteriology,* 111 (September 1972), 641-48.

MARVIN L. TYAN

(See entries under School of Dentistry.)

WILLIAM J. YOUNT

(See entries under Department of Medicine.)

HASAN I. ZEYA

(With R. Pennial.) "The Effects of Cationic Proteins of Rabbit Polymorphonuclear Leukocyte Lysosomes in the Respiratory Activity of Liver Mitochondria," *Biochemical and Biophysical Research Communications,* 45 (1971), 6-13.

(With I. R. H. Welsh and J. K. Spitznagel.) "Heterogeneity of Lysosomes from Human Peripheral Blood Polymorphonuclear Leukocytes," *Federation Proceedings,* 30 (1971), 599.

(With J. Laszlo.) "Herterogeneity of Lysosomal Enzymes in Leukemic Myeloblasts," *Blood* 38 (1971), 825.

(With R. Penniall and J. P. Holbrook.) "Effects of Cationic Proteins of Polymorphonuclear Leukocytes on Mitochondrial Respiration and Cytochrome C Oxireductase," *Fed-*

eration Proceedings, 31 (1972), 282.

(With R. Penniall.) "The Inhibition of Cytochrome Oxidase by Lysosomal Cationic Proteins of Rabbit Polymorphonuclear Leukocyte," *Biochemical and Biophysical Research Communications,* 47 (1972), 1270.

Dissertions and Theses

The following doctoral dissertations were completed under the direction of the department:

Herman Richard Gaumer

The Effect of Streptococcal Products on Lymphoiesis in Mice. (1971, under the direction of John H. Schwab.)

Eng-Shang Huang

Structure and Function of the Polypetides in Simian Virus 40. (1971, under the direction of Joseph S. Pagano.)

Geraldine Hobson Luginbuhl

Physiological, Biochemical and Genetic Studies in the Group H Streptococcus Strain Challis. I. Competence for Genetic Transformation. II. Galactose Metabolism; Enzymatic Pathway and Mapping. (1971, under the direction of Harry Gooder.)

Mary Clarke Kolb Estes

Studies on the Structural Polypeptides of Simian Virus 40. (1972, under the direction of Joseph S. Pagano.)

Marguerite Grimes Pennington

The Stability of the Group A Streptococcal Cell Wall. (1972, under the direction of William J. Cromartie.)

Ian Richard Hepburn Welsh

Morphology, Composition and Biological Activities of Human Polymorphonuclear Leukocyte Granules. (1972, under the direction of John Keith Spitznagel.)

The following master theses were completed under the direction of the department:

Lizzie J. Harrell

Anaerobic Bacteria Isolated from Clinical Specimens. (1971, under the direction of Janet Fischer.)

CHARLENE GAYLE FOSTER

Detection of Herpesvirus Type 2 DNA by Means of Hybridization with Complementary RNA. (1972, under the direction of JOSEPH S. PAGANO.)

DEPARTMENT OF BIOCHEMISTRY AND NUTRITION

FRED E. BELL

(With H. Y. K. Chuang.) "Use of a Thermal Inactivation Technique to Obtain Binding Constants for the Escherichia coli Valyl-tRNA Synthetase," *Archives of Biochemistry and Biophysics,* 152 (October 1972), 502-14.

MICHAEL KALEN BERKUT

(With R. L. Montgomery, A. A. Fedinec, E. L. Hogan and M. C. Singleton.) *Nervous System Basic Sciences, 1500 Multiple Choice Questions.* New York: Medical Examination Publishing Co., Inc., 1972. Pp. 213.

(With R. L. Montgomery.) "Effects of Nephrectomy on Erythropoiesis in Rats," *Journal of the Elisha Mitchell Scientific Society,* 87 (1971), 152, Abstract.

(With R. L. Montgomery.) "Erythropoietic and Myotrophic Activity in Amygdaloid Lesioned Rats," *Anatomical Record,* 172 (1972), 270, Abstract.

(With R. L. Montgomery, N. S. Duncan and V. M. Crasenzo, Jr.) "Cathecholamine Levels in Brain-Lesioned Rats," *Journal of the Elisha Mitchell Scientific Society,* 87 (1971), 153, Abstract.

(With R. L. Montgomery, K. N. May and J. B. Moore, III.) "Altered Behavior and its Influence on Endocrines and Water Metabolism," *Physiology and Behavior,* 7 (1971), 873-76.

KARL F. BLAU

(With D. J. Edwards.) "A Modified Automated Fluorometric Method for the Determination of Tyrosine in Blood and Tissues and Its Specificity," *Biochemical Medicine,* 5 (1971), 333-41.

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Mary J. Druse

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(With Y. J. Lee.) "Photoaddition and Photoreduction Reactions of Azastilbenes. Solvent Effects on the Photoreactivity of Aza Aromatics," *Journal of American Chemical Society,* 94 (December 1972), 9142-48.

Dissertations and Theses

The following doctoral dissertations were completed under the direction of the department:

David Charles Baker

Paramagnetic Resonance Studies of Thulium Ethylsulfate. (1971, under the direction of Henry Hursell Dearman.)

Stephen Edward Bales

I. ESR Studies of Strained Aromatic Hydrocarbons. II. Iodine Oxidation of 4-pentenyl-1-thiosulfate. (1972, under the direction of Reuben Dennis Rieke.)

Stephen Albert Benezra

I. Simplified Quasi-Equilibrium Theory Applied to Substituent Effects in the Mass Spectra of Acetanilides and Phenyl Acetates. II. Electrophilic Substitution in the Gas Phase: An Ion Cyclotron Resonance Study. (1971, under the direction of Maurice Moyer Bursey.)

Allan Ross Burkett

Oxidation and Photochemical Reaction of bis(π-cyclopentadienylmolybedenumtricarbonyl). (1972, under the direction of Thomas Judy Meyer.)

John Robert Cockrell, Jr.

I. Deuterium Labeling by Electrochemical Reactions. II. A Stopped-Flow Kinetic Approach to the Electrochemical ECE Question. (1971, under the direction of Royce Wilton Murray.)

Robert Arthur Copenhafer

I. The Photochemistry of 4,6-Diphenyl-2-pyrone. II. Electrochemical and ESR Studies on Phenyl Substituted Cyclooctatetraenes. III. Electrochemical and ESR Studies on cyclic 1,4-Diphosphoniacyclohexa-2,5-diene Salts. (1971, under the direction of Reuben Dennis Rieke.)

Julia Cheryl Baker Dammann

Part I: Addition Reactions of Some Square Planar d^8 Complexes of Rh(I), Ir(I), Pd(II), Pt(II) with Stannic and Mercuric Halides. Part II: The Crystal and Molecular Structure

of $[(Ph_3P)_2 Rh(CO)]_2 \cdot 2CH_2Cl_2$. (1972, under the direction of THOMAS JUDY MEYER.)

WALTER EUGENE DANIEL, JR.

Investigation of the Conformational Properties of Ribonuclease A by the Spin Label Technique. (1972, under the direction of RICHARD GRANT HISKEY.)

THOMAS ALTON ELWOOD

I. The *para*-Fluoro Substituent as an Inert Label in Mass Spectrometry. II. The Ion-Molecule Chemistry of Butane-2,3-dione as an Acetylating Agent in Ion Cyclotron Resonance Mass Spectrometry. (1971, under the direction of MAURICE MOYER BURSEY.)

JOHN ALLEN FERGUSON

Electrochemistry of Compounds Containing Iron and Ruthenium Metal-Metal Bonds. (1971, under the direction of THOMAS JUDY MEYER.)

JOHN MORGAN FLOWERS

Electron Paramagnetic Resonance Studies of Chromium(III), Oxovanadium(III), and Iron(II) Ions in Single Crystals of Ammonium Pentachloroantimonate. (1972, under the direction of HENRY HURSELL DEARMAN.)

LLOYD EDWARD FOX

Studies in the Instrumentation and Computerization of Some Analytical and Electrochemical Problems. (1972, under the direction of CHARLES NORWOOD REILLEY.)

EUGENE MICHAEL GREGORY

Purification, Chemical Modification, and Partial Subunit Characterization of Porcine Heart Mitochondrial Malate Dehydrogenase. (1971, under the direction of JOHN HENRY HARRISON, IV.)

PHILLIP MONTGOMERY HUDNALL

Cyclobutadiene Radical Anions and Dianions. (1972, under the direction of REUBEN DENNIS RIEKE.)

GUY WILSON INMAN, JR.

Part I: The Magnetic Properties of Pseudo-Tetrahedral Nickel(II) Complexes and Part II: Magnetic Exchange In-

teractions in Dimeric and Polymeric Copper(II) Complexes. (1971, under the direction of WILLIAM EMERSON HATFIELD.)

JOHN LEONARD ISIDOR

4-Amino Thieno, Furo, and Pyrrolo[2,3-d]pyrimidines. (1971, under the direction of ROBERT LAMBERT MCKEE.)

DAVID YANDELL JETER

Influence of Bridge Identity and Geometry on Antiferromagnetic Interactions in Magnetically Condensed Complexes. (1971, under the direction of WILLIAM EMERSON HATFIELD.)

PETER THOMAS KISSINGER

I. Aspects of Thin-Layer Electrochemistry. II. Aspects of Semi-Infinite Spectroelectrochemistry. III. Electrochemical Studies of Some Molecules Containing the Diphenysulfide Moiety. (1971, under the direction of CHARLES NORWOOD REILLEY.)

YOUG JAI LEE

Photochemistry of N-Heteroaromatus. (1971, under the direction of DAVID GEORGE WHITTEN.)

IRENE GULLEDGE LOPP

Photochemistry of Zinc and Magnesium Porphyrin Complexes. (1971, under the direction of DAVID GEORGE WHITTEN.)

GORDON NAPIER MITCHELL

The Synthesis of Some Derivatives of Isocytosine. (1972, under the direction of ROBERT LAMBERT MCKEE.)

NED AARON MOORE

The Cyclic Addition of Alkoxy Radicals. (1971, under the direction of REUBEN DENNIS RIEKE.)

WILLIAM GALE RHODES

Part I: Oxidation of the Sulfhydryl Group by the Nitroxide Radical. Part II: Reaction of 4,4'-*Bis*-Dimethylaminodiphenylcarbinol with the Sulfhydryl Group: Application to Insulin Synthesis and Sulfhydryl Analysis. (1971, under the direction of RICHARD GRANT HISKEY.)

WILLIAM EDWARD RICH, JR.

I. Ring Strain Effects on Aromatic Properties. II. Explor-

atory Electrochemistry. (1971, under the direction of REUBEN DENNIS RIEKE.)

THOMAS HOUSTON RIDGWAY

I. Electrochemical Mechanistic Studies. II. Double Potential Step Responses for the Cascade Mechanism. (1971, under the direction of CHARLES NORWOOD REILLEY.)

GERALD DALE SMITH

Stereochemistry of E2 Elimination. (1972, under the direction of JAMES LOGAN COKE.)

JERRY CLAUDE SMITH

I. The Electronic Structure of 10-Methylene Anthrone and Phthaladehyde. II. The Induces Circular Dichroism of Acridine Orange Bound to Poly(L-Glutanic Acid). (1971, under the direction of HENRY HURSELL DEARMAN.)

RICHARD PALMER VAN DUYNE

I. Low Temperature Electrochemistry. II. Double Potentential Step Chronocoulometry. (1971, under the direction of CHARLES NORWOOD REILLEY.)

JACK THOMAS VEAL

Crystal Structures of Ruthenium Nitrosyls and Magnetically Condensed Systems. (1972, under the direction of DEREK JOHN HODGSON.)

LARRY ESTEL WARREN

The Electronic Structure and Magnetism of α-diketone-bis-(thiosemicarbazone)-copper(II) Complexes. (1971, under the direction of WILLIAM EMERSON HATFIELD.)

LANDY BRUCE WHITE

Substituted Hydrazones of Alloxan and Alloxan Analogues. (1972, under the direction of ROBERT LAMBERT MCKEE.)

ROBERT EDWARD WILLIAMSON

The Synthesis of 1,3-Dihydroxy-8(10)phenazione and its N-oxide. (1972, under the direction of ROBERT LAMBERT MCKEE.)

DONALD CHARLES YOUNG

Proton Magnetic Resonance Studies of Solution Structure, Ligand, Conformation, and Coordination Dynamics of Para-

magnetic Nickel(II) Complexes. (1971, under the direction of CHARLES NORWOOD REILLEY.)

BIZHAN MOHAMMED ZARNEGAR

The Importance of Electronic Excited States in the Gamma Radiolysis of Organic Liquids. Determination of the G Value of Excited Singlets and Triplets Produced in the Gamma Irradiation of Benzene. (1972, under the direction of DAVID GEORGE WHITTEN.)

The following masters' theses were completed under the direction of the department:

MARY ANN MONROE ATWATER

Part I: Rotational Barriers of Cyclopropyl Carbonium Ions. Part II: Ring Inversion and Rearrangement of a Monochomotropylium Ion. (1972, under the direction of MAURICE S. BROOKHART.)

CAROL ANN DEROSIER

Photochemistry of Cobalt Porphyrin Complexes. (1972, under the direction of DAVID GEORGE WHITTEN.)

GWEN VEALE HENDRIX

Extraction Studies of K^+ Transport in Methylene Chloride with Valinomycin as Carrier. (1971, under the direction of RICHARD PIERSON BUCK.)

JON WAYNE LODGE

The Determination of the Presence and Analytical Concentration of Component *a*-Aminoacids in a Mixture. (1972, under the direction of CHARLES NORWOOD REILLEY.)

FRANK D. MCDONOUGH

The Synthesis and Characterization of Transition Metal Atom Cluster Compounds Containing Platinum-Germanium and Platinum-Tin Bonds. (1972, under the direction of DONALD CHARLES JICHA.)

MARTHA HODGE MEYER

The Crystal and Molecular Structure of Carbonatodiamminecopper(II). (1971, under the direction of DEREK JOHN HODGSON.)

LEONARD HOYT NELMS

Computer Analysis and Interpretation of Infrared Spec-

tra. (1972, under the direction of CHARLES NORWOOD REILLEY.)

CATHY ROACH OLLIS

Magnetic Studies of Complexes with Sulfur Donor Atoms. (1971, under the direction of WILLIAM EMERSON HATFIELD.)

ROBIN DARYL PORTER

Mixed Ion and Time Responses of the Beckman Sodium Ion-Selective Electrode. (1972, under the direction of RICHARD PIERSON BUCK.)

WAYNE EUGENE PUNCH

Study of Excited State Carbonyl-Phenyl Interactions for Non-Conjugated Aryl Ketones. (1971, under the direction of DAVID GEORGE WHITTEN.)

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DEPARTMENT OF CITY AND REGIONAL PLANNING

EDWARD MONROE BERGMAN

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MAYNARD MICHAEL HUFSCHMIDT

(With Karl Elfers.) *Water Resource Planning in the Urban-Metropolitan Context.* Report to the U. S. Office of Water Resources Research, Chapel Hill, N. C., 1971. Pp. 273.

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EDWARD JOHN KAISER

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ROBERT MICHAEL MORONEY

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FRANCIS HAYWOOD PARKER

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JAMES ARTHUR SCOTT

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Review of Francine E. Rabinovitz, *City Politics and Planning* (New York: Atherton Press, 1969), in *Journal of American Institute of Planners,* 35 (November 1969), 430.

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MICHAEL ALLEN STEGMAN

Editor, *Housing and Economics: The American Dilemma,* Cambridge: The M.I.T. Press, 1971.

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"Home Ownership Opportunities for the Poor: An Ex-

ploration and Analysis," in *Encyclopedia of Social Work.* New York: National Association of Social Workers, 1971. Pp. 617-622.

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SHIRLEY FRIEDLANDER WEISS

(With E. J. Kaiser.) "Public Policy and the Residential Development Process," in *Internal Structure of the City: Readings on Space and Environment,* ed., Larry S. Bourne. New York: Oxford University Press, 1971. Pp. 188-99.

(With E. J. Kaiser and R. J. Burby III.) *New Community Development: Planning Process, Implementation, and Emerging Social Concerns. 2 vols.* Chapel Hill: New Towns Research Seminar, Center for Urban and Regional Studies, University of North Carolina at Chapel Hill, 1971. Pp. 527 (Volume 1); pp. 264 (Volume 2).

(With J. J. Gildea.) *GE-UNC New Towns Financial Feasibility Model: A User's Manual for the IBM 360 Short Program.* Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1971. Pp. 62.

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(With J. B. Slidell.) *A User's Guide to the GE-UNC New Towns Financial Feasibility Model - Long Program.* Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1972. Pp. 148.

(With R. J. Burby III and T. G. Donnelly.) *Lake Norman Development Impact Study.* Prepared for Centralina Council of Governments and Lake Norman Marine Commission. Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1972. Pp. 121.

(With R. J. Burby III and T. G. Donnelly.) *Multipurpose Reservoirs and Urban Development.* Prepared for Workshop on "Planning the Development and Use of Reservoir Shorelines in North Carolina." Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1972. Pp. 52.

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"New Cities," *Panhandle Magazine,* 5 (Spring 1971), 18-22.

(With R. J. Burby III.) "Community Problems in Reservoir Recreation Areas," *Research Previews,* 18 (April 1971), 1-13.

(With R. J. Burby III and T. G. Donnelly.) "Vacation Home Location: A Model for Simulating the Residential Development of Rural Recreation Areas," *Regional Studies,* 6 (December 1972), 421-39.

(With R. J. Burby, III and T. G. Donnelly.) "Simulating Residential Development of Rural Recreation Areas," *The Review of Regional Studies,* 3 (Fall 1972), 134-44.

Dissertations

The following doctoral dissertations were completed under the direction of the department:

Howard Benjamin Fisher

Evaluation of Alternative Plans for New Communities: Toward Application of the Competition-for-Benefits Model. (1971, under the direction of Edward John Kaiser.)

David Robinson Godschalk

Participation, Planning and Exchange in Old and New Communities: A Collaborative Paradigm. (1971, under the direction of George Charles Hemmens.)

Richard Nigel Lyon Andrews

Environmental Policy and Administrative Change: The National Environmental Policy Act of 1969, 1970-71. (1972, under the direction of Maynard Michael Hufschmidt.)

Kenneth Ben Kenney

The Residential Land Developer and His Land Purchase Decision. (1972, under the direction of Francis Stuart Chapin.)

Thomas Harvey Logan

The Invention of Zoning in the Emerging Planning Profession of Late-Nineteenth Century Germany. (1972, under the direction of Sidney Cohn.)

Kuniyoshi Takeuchi

Optimal Control of Multi-Unity Inter-Basin Water-Re-

source Systems. (1972, under the direction of DAVID HUMPHREYS MOREAU.)

DEPARTMENT OF CLASSICS

WALTER ALLEN, JR.

"The Leyden MS of Tacitus' Major Works," *Transactions and Proceedings of the American Philological Association,* 101 (1970), 1-28.

THOMAS ROBERT SHANNON BROUGHTON

"The Territory of Carthage," *Revue des Études Latines,* 47 *bis* (1970), 265-75.

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EDWIN LOUIS BROWN

"Achilles and Deidamia on the Portland Vase," *American Journal of Archaeology,* 76 (October 1972), 379-91.

HENRY PHELPS GATES

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GEORGE WOODARD HOUSTON

"Bibliography of Recently Published Articles in Ancient History," *American Historical Review,* 77 (1972), 267-77, 880-87, 1222-33.

HENRY RUDOLPH IMMERWAHR

"A Projected Corpus of Attic Vase Inscriptions," in *Acta of the Fifth International Congress of Greek and Latin Epigraphy, Cambridge 1967.* Oxford: B. Blackwell, 1971. Pp. 53-60.

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GEORGE ALEXANDER KENNEDY

(With Juliette Ernst.) Co-editor, *L'Année Philologique. Bibliographie critique et analytique de l'antiquité gréco-latine.*

The Art of Rhetoric in the Roman World (*A History of Rhetoric,* II). Princeton: Princeton University Press, and London: Oxford University Press, 1972. Pp. xvi, 658.

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(With G. Erickson, F. Kramer, and R. T. Scanlon.) "A Reading List on the Classical Humanities," *Humanities,* 2, no. 5 (1972), 6-7.

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Review of Michael Winterbottom, *Quintilian* (Oxford: The Clarendon Press, 1970) and *ibid., Problems in Quintilian* (London: Institute of Classical Studies, 1970), in *Journal of Roman Studies,* 56 (1971), 308-9.

Review of D. A. Russel and M. Winterbottom, *Ancient Literary Criticism. The Principal Texts in New Translations.* (Oxford: Clarendon Press, and New York: Oxford University Press, 1972), in *The Classical World,* 66 (November 1972), 178-79.

GERHARD KOEPPEL

Review of Tonio Holscher, *Victoria Romana* (Mainz: Zabern, 1967), in *Bonner Jahrbücher,* 170 (1970), 538-41.

Review of Hans Georg Niemeyer, *Studien zur Statuarischen Darstellung der Römischen Kaiser* (Berlin: Gebr. Mann Verlag, 1968), in *American Journal of Archaeology,* 75 (April 1971), 229-30.

BERTHE MARIE MARTI

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BROOKS OTIS

"The Eclogues: A Reconsideration in the Light of Klingner's Books," in *Vergiliana, Recherches sur Virgile,* eds., Bardon and Verdiere.

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Review of Gordon Williams, *Tradition and Originality in Roman Poetry* (Oxford: Clarendon Press, 1968) in *American Journal of Philology,* 92 (April 1971), 316-30.

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DAVID SIDER

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PHILIP AUSTIN STADTER

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John Frances Barrett

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Geraldine Cornelia Gesell

The Archaeological Evidence for the Minoan House Cult and its Survival in Iron Age Crete. (1972, under the direction of Sara Anderson Immerwahr.)

Nicholas Putnam Gross

The Rhetoric of Love: Studies in Ancient Amatory Persuasion. (1971, under the direction of George Alexander Kennedy.)

George Woodard Houston

Roman Administrative Personnel during the Principates of Vespasian and Titus (A.D. 69-81). (1971, under the direction of Thomas Robert Shannon Broughton.)

Ian Ritchie McDonald

The Flavian Epic Poets as Political and Social Critics. (1971, under t he direction of George Alexander Kennedy.)

Sister Mechtilde O'Mara

The Structure of the De Oratore: A Study in Ciceronian Amplification. (1970, under the direction of George Alexander Kennedy.)

Kathleen Blanche Rankin

The Physician in Ancient Comedy. (1972, under the direction of Kenneth Joseph Reckford.)

David Lowell Thompson

The Classes and Hands of Painted Funerary Portraits

from Antinoopolis. (1972, under the direction of EMELINE HILL RICHARDSON.)

LOIS HINCKLEY WALSH

Ajax and Achilles: Their Literary Relationship from Homer to Sophocles. (1972, under the direction of KENNETH JOSEPH RECKFORD.)

CECIL W. WOOTEN

A Rhetorical and Historical Study of Hellenistic Oratory. (1972, under the direction of GEORGE ALEXANDER KENNEDY.)

The following masters' theses were completed under the direction of the department:

FLORENCE DALY BATTIS

Olbos and Related Ideas from Solon to Herodotus. (1971, under the direction of DOUGLAS CUTHBERT COLQUHOUN YOUNG.)

VIRGINIA DAVIS DELPH

How to End an Epic: A Study of the Traditional Patterns in the Endings of Latin Epics. (1971, under the direction of GEORGE ALEXANDER KENNEDY.)

HUBERT WILSON HAWKINS, JR.

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CYNTHIA ANNE KELLEY

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MARTHA JOANNA PAYNE

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WARREN STITT SEIPP, III

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JOHANNA MARIE ZIMMER

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FREDERICK PHILLIPS BROOKS, JR.

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DAVID STEWART BRAITHWAITE

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SAM DUNN BRYAN

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RALPH OMWAKE DEARBORN

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JAMES MAYO GULLETT

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JOHN JULIUS JACOBS

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ELIZABETH SHIELD LANDIS

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CAROL LOEB MIR

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JOE RAY RAGLAND, JR.

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TOMLINSON GENE RAUSCHER

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OMAR AZIZ SAIYID

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DAVID STEELE SCOTT

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KATHERINE SOULE

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TYNAN ARTHUR WAIT

Conversion of the Hypertext Editing System from the IBM 2250 Graphics Terminal to the CC-30 Alphanumeric Terminal. (1972, under the direction of STEPHEN FREDERICK WEISS.)

The following doctoral dissertations were completed under the direction of the department:

ARTHUR FRANK ACKERMANN

Toward a Programming Language for Writing and Checking Mathematical Discourses. (1971, under the direction of DONALD FORD STANAT.)

ERIC DANIEL CARLSON

Techniques for Analysis of Generalized Data Base Management Systems. (1972, under the direction of PETER CALINGAERT.)

TRUMAN MATTHEWS JOLLEY, JR.

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DAVID FRANKLIN MCALLISTER

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WILLIAM VAUGHN WRIGHT

An Interactive Computer Graphic System for Molecular Studies. (1972, under the direction of FREDERICK PHILLIPS BROOKS, JR.)

CURRICULUM IN COMPARATIVE LITERATURE

EUGENE HANNES FALK

(See entries under the Department of Romance Languages.)

ALDO DOMENICO SCAGLIONE

(See entries under the Department of Romance Languages.)

SIEGFRIED WENZEL

(See entries under the Department of English.)

DISSERTATIONS AND THESES

The following doctoral dissertations were completed under the direction of the Curriculum:

ENIKO MOLNAR BASA

The Tragedy of Man as an Example of the *Poene D'Humanite:* An Examination of the Poem by Imre Madach with Reference to the Relevant Works of Shelley, Byron, Lamartine and Hugo. (1972, under the direction of PAUL DEBRECZENY.)

MARGARET HART CANNON

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KARIN CIHOLAS

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DIANA CULBERTSON

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JOERG FICHTE

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CONCETTA GREENFIELD

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DIANE LEONARD HINKLE

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ELAINE HOOVER

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The following masters' theses were completed under the direction of the Curriculum:

LADSON BRIGHT

Poe and Mallarme. (1971, under the direction of ALFRED ENGSTROM.)

FLORINE BURCH

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JILL ABBOTT CLOONAN

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JEFFREY LOOMIS

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EILEEN RADEKER

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MYRA DALE RAINEY

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LINDA REICH

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AURELLA SEGHEZZO

Rafael Alberti's *El Adefesio.* (1970, under the direction of JANET DIAZ.)

DAVID WELLS

Swinburne's Evaluation of Victor Hugo. (1971, under the direction of ALFRED ENGSTROM.)

CURRICULUM IN RECREATION ADMINISTRATION

HANSON DOUGLAS SESSOMS

Glossary of Reaction and Park Terms. Management Aids, No. 95. Washington: National Recreation and Park Association, 1972. Pp. 64.

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THESES

The following masters' theses were completed under the direction of the curriculum:

MARIE E. BRIAN

An Analysis of the Leisure Interests of the Committed Delinquent and the Relationship Between These Interests and Certain Selected Socioeconomic Variables, (1972, under the direction of HANSON DOUGLAS SESSOMS.)

BEATRICE A. CORBETT

An Attitude Structure of Selected Parents of Developmentally Handicapped Children Toward Play. (1971, under the direction of HANSON DOUGLAS SESSOMS.)

BARBARA KAHDY DORSEY

A Glossary of Recreation Terms. (1971, under the direction of HANSON DOUGLAS SESSOMS.)

GERALD S. FAIN

A Concurrent Validity Study of Hubert's "Leisure Interest Inventory". (1971, under the direction of THOMAS A. STEIN.)

CHARLOTTE E. FARRIS

A Study of the Organization and Operation of the Rehabilitation Program at a Day Hospital of the Alamance County Mental Health Center from October 1, 1968 through September 26, 1969. (1972, under the direction of HANSON DOUGLAS SESSOMS.)

SARA ANTHONY FRANCIS

An Exploratory Study of the Preparation of Children for Hospitalization Utilizing a Play Technique. (1972, under the direction of HANSON DOUGLAS SESSOMS.)

THOMAS BLAIR HINES

An Investigation of the Status of Municipal Recreation Personnel Certification in North Carolina. (1971, under the direction of HANSON DOUGLAS SESSOMS.)

GEORGE H. JACKSON, JR.

A Study of the Correlation Between Unscheduled Activities and Scheduled Courses at the North Carolina Rehabilitation Center for the Blind. (1972, under the direction of HANSON DOUGLAS SESSOMS.)

PAULA BETH LUTZIN

A Survey of the Accessibility of Recreation and Cultural Areas and Facilities for the Physically Handicapped in Boston, Massachusetts. (1972, under the direction of THOMAS A. STEIN.)

KATHLEEN JANE SIMPSON

An Exploratory Study of Personality Characteristics of North Carolina Professional Therapeutic Recreators. (1972, under the direction of HANSON DOUGLAS SESSOMS.)

ROBERT JOSEPH STACHOWIAK

A Proposed Method to Study Group Structure and Role Functions Within a Recreation Setting. (1971, under the direction of HANSON DOUGLAS SESSOMS.)

SHARON KEY SYKES

A Comparative Analysis of the Recreation Programs in

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LAURA K. WILLADSEN

A Case Study of the Importance of Recreation Therapy in a Breathing Training Program for Asthmatic Children. (1972, under the direction of Hanson Douglas Sessoms.)

CURRICULUM IN GENETICS

EDWARD GAIL BARRY

(See entries under the Department of Botany.)

MICHAEL ALAN BLEYMAN

(See entries under the Department of Zoology.)

KENNETH FRANCIS BOTT

(See entries under the Department of Bacteriology and Immunology.)

MARSHALL HALL EDGELL

(See entries under the Department of Bacteriology and Immunology.)

BRUCE KENT ECKLAND

(See entries under the Department of Sociology.)

ROBERT CLAUDE ELSTON

(See entries under the School of Public Health, Department of Biostatistics.)

EDWARD GLASSMAN

(See entries under the Department of Biochemistry.)

HARRY GOODER

(See entries under the Department of Bacteriology and Immunology.)

ROBERT ANDREW GOYER

(See entries under the Department of Pathology.)

JOHN BORDEN GRAHAM

(See entries under the Department of Pathology.)

GEOFFREY HAUGHTON

(See entries under the Department of Bacteriology and Immunology.)

CLYDE A. HUTCHISON III

(See entries under the Department of Bacteriology and Immunology.)

HENRY NEIL KIRKMAN

(See entries under the Department of Pediatrics.)

THOMAS CARLYLE LONG

(See entries under the Departments of Botany and Zoology.)

JOHN CHARLES LUCCHESI

(See entries under the Department of Zoology.)

WILLIAM SPROTT POLLITZER

(See entries under the Department of Anatomy.)

MICHAEL RONALD SWIFT

(See entries under the Department of Medicine.)

MAURICE WHITTINGHILL

(See entries under the Department of Zoology.)

The following doctoral dissertations were completed under the direction of the curriculum:

WILLIAM LEE BISCHOFF, JR.

Genetic Organization in *Drosophila Melanogaster:* Complementation and Fine Structure Analysis of the Deep Orange Locus. (1971, under the direction of JOHN C. LUCCHESI.)

REBECCA JANE BROWN

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SCHOOL OF DENTISTRY

GEORGE DOUGLAS ALLEN

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ROGER E. BARTON

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GERALD MASON CATHEY

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BARRY LEE WHITSEL

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MATTHEW THOMAS WOOD

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THESES

The following masters' theses were completed under the direction of the School:

FRED ALBERT BELL, III

The Effects of Cryotherapy on the Developing Dento-Alveolar Structures in Rats. (1972, under the direction of MARVIN EDWARD CHAPIN.)

DUDLEY CARLYLE CHANDLER, JR.

Parotid Salivary IgA and Periodontal Disease. (1972, under the direction of ROGER LAUREN LUNDBLAD and MYRON SIMEON SILVERMAN.)

WILLIAM HENRY CLAYPOOLE

Oral Port Constriction during Fricative Production in Normal and Cleft Palate Subjects. (1972, under the direction of DONALD WILLIAM WARREN.)

MASON ORLANDO COX

Oral Leukocytes and Gingivitis in the Primary Dentition. (1972, under the direction of JAMES JOSEPH CRAWFORD, WAL-

TER THOMPSON MCFALL, JR., and ROGER LAUREN LUNDBLAD.)

HOYT STANLEY FORD

The Relationship of *Mycoplasma* Species and Gingival Tissues. (1972, under the direction of ERNEST JEFFERSON BURKES, JR.)

JAMES CLEAVER HART

Sagittal Growth Trends of the Craniofacial Complex during Development of the Secondary Palate in Mice. (1971, under the direction of GARY RAY SMILEY.)

EUGENE FREDERICK HOWDEN

A Study of the Factors Which Influence the Absorption of Orally Administered Sedatives. (1971, under the direction of WILLIAM JOSEPH WADDELL.)

BARRETT MCKENZIE HUNTER

Nasal Airway Impairment and Dentofacial Deformity. (1971, under the direction of DORIS PARKER BRADLEY.)

STEVEN EUGENE JACOBSON

Oral Physiotherapy of the Tongue and Palate: Relationship to Plaque Control. (1972, under the direction of JAMES JOSEPH CRAWFORD and WALTER THOMPSON MCFALL, JR.)

THOMAS L. KLECHAK

Anterior Open Bite and Oral Port Constriction. (1971, under the direction of DORIS PARKER BRADLEY.)

PAUL CLINTON LEHMAN

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JEFFREY PAGET MAZZA

Cholinesterase Activity in the Trigeminal Ganglion. (1972, under the direction of ANDREW DERART DIXON.)

MICHAEL T. MCKEE

Appraisal of Begg-Treated Cases. (1971, under the direction of ROBERT MELLINGER NELSON.)

JIMMY RANDOLPH PINKHAM

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JAMES R. STRAIT

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TOM REZZUTO

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KONRAD ZOBEL

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THESES

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SUSAN ANN ARNOLD

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WILLIAM CUTLER DONAVAN

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C. MITCHELL DOUGLAS

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BARBARA ELIZABETH GORDON

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EUGENE W. ROSS

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JAMES ANDREW WILDE

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"Social Goods, Benefit Taxation and Income Elasticity," *Public Finance,* 27 (1972), 79-81.

DISSERTATIONS

The following doctoral dissertations were completed under the direction of the department:

LAWRENCE VICTOR ASCH

Selective Variation of Private Labor Demand—Rationale,

Practice and Potential. (1971, under the direction of PAUL NEWMAN GUTHRIE.)

WILLIAM EDWARD AVERA

A Geometric Mean Strategy as a Theory of Multiperiod Portfolio Selection. (1972, under the direction of HENRY ALLEN LATANÉ.)

JOSEPH MARVIN CREWS

Alternative Optimal Open Market Strategies: A Simulation Approach. (1972, under the direction of ARTHUR BENAVIE.)

FREDERICK JOSEPH EGGERS

Interdistrict Settlement Fund Data and Regional Balance of Payment Adjustment. (1971, under the direction of DENNIS RAY APPLEYARD.)

STUART RICHARD LYNN

Aid Requirements for Development: The Case of India. (1971, under the direction of DENNIS RAY APPLEYARD.)

ROBERT J. MCINTYRE

Nature and Causes of the Fertility Decline in Eastern Europe: Structural Change and Abortion Reform from 1955 to 1968. (1972, under the direction of ROBERT EMIL GALLMAN.)

ROBERT JOHN MACKAY

Monetary Growth Models. (1972, under the direction of ROBERT NEIL WAUD.)

GLENN CLAIR PICOU

The Neoclassical Model of Optimal Capital Demand. (1972, under the direction of ROGER NEIL WAUD.)

RAYMOND PRINCE III

The Effect of Government Policies to Attract Private Investment into the Manufacturing Sector of Mexico, 1940-1965. (1971, under the direction of ALFRED JOSEPH FIELD.)

DALE EVANS SWAN

The Structure and Profitability of the Antebellum Rice Industry: 1859. (1972, under the direction of ROBERT EMIL GALLMAN.)

DAVID MITCHELL SWANSON

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PETER TREADWAY

An Explanation of the Conglomerate Merger Movement—The Conglomerate as a Result of Forces Arising in the Capital Markets. (1971, under the direction of AVERY BERLOW COHAN.)

OBIE GUILFORD WHICHARD

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SCHOOL OF EDUCATION

J. HUNTER BALLEW

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JOHN C. BRANTLEY

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MARY TURNER LANE

Editor, *Journal of the North Carolina Council for the Social Studies.*

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A. P. MACDONALD, JR.

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JANICE LYNN HENRY

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GEORGE O. HILLARD III

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JANE KATHERINE HINDE

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MARY JANE HORTON

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ELIZABETH M. LACAVA

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LAURETTE E. LALONDE

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PATRICIA W. LILLY

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JOELLE BRONSTEIN LOGUE

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EMILY ANN MATSON

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CAROL LYNN MCKNIGHT

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MICHAEL J. MCTAGUE

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DENNIS DUANE MOORE

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MARY VIRGINIA MORAN

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LORRAINE R. MORIARTY

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MERRITT W. MOSELEY

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DAVID M. MOSER

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CAROLE S. NAPOLITANO

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FRIEDERIKE K. NELSON

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NEAL RICHARD NORRICK

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JEROME J. OETGEN, O.S.B.

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DELORES ANN PARKER

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PETYA L. PERKINS

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CLAUDIA RUTH STILLMAN

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LINDA CAROL THORNTON

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MARY HOPKINS WALKER

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DONNA PAGE WEST

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BARBARA YONCE

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SPEECH DIVISION

Department of English

BERT E. BRADLEY

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PAUL D. BRANDES

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THESES

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SANDRA N. BOYCE

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DIANE E. DEES

Dr. James R. Strain's Funeral Oration: The Burial of

"Bad Government" in Louisiana. (1972, under the direction of JAMES WORTH PENCE, JR.)

ROBERT L. FRANK

Agnew Challenges the Media: A Rhetorical Criticism. (1972, under the direction of BERT E. BRADLEY.)

BRENDA J. HARNAGE

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THOMAS J. HYNES, JR.

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TONY M. LENTZ

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ROBERT C. WEAVER

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EXTENSION DIVISION STAFF

NORFLEET HARDY

Editor, *NCAEA Notes*, North Carolina Adult Education Association.

Review of Thomas Kelly, *A History of Adult Education in Great Britain,* Second Edition (Liverpool, England: Liverpool University Press, 1970), in *Adult Education,* 21 (Spring 1971), 196-99.

DWIGHT CARROLL RHYNE

Editor, *Adult Education:* A Journal of Research and Theory.

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Audiovisual Bureau

KENNETH MURCHISON MCINTYRE

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DEPARTMENT OF GEOGRAPHY

STEPHEN SHAW BIRDSALL

Guest Editor, *Southeastern Geographer*, November 1971. ("A Special Issue on Geographic Aspects of Black America.")

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BARRY MARTIN MORIARTY

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DISSERTATIONS AND THESES

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WILKS DOUGLAS HARRISON

Geography of Iron Ore Pellets. (1971, under the direction of RICHARD G. SMITH.)

IN KIM

Spatial Impact of Federal Outlays on the Metropolitan Areas in the United States. (1972, under the direction of CLYDE E. BROWNING.)

JAMES MONTGOMERY MEADE

Hospital Service Areas in Idaho: A Geographic Approach to Spatial Efficiency. (1971, under the direction of JOHN W. FLORIN.)

GEORGE FREDERICK RENGERT

Migration Probabilities: A Study of Migration from the Agricultural Villages Around Ojuelos, Mexico. (1971, under the direction of DAVID G. BASILE.)

WILLIAM DOUGLAS WARREN

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ROGER WIRINGA WHITE

Spatial Interactions and Dynamic Central Place Theory. (1972, under the direction of STEPHEN S. BIRDSALL.)

LOUIS ALAN WOODS

The Soviet Chemical Fiber Industry. (1972, under the direction of RICHARD E. LONSDALE.)

The following masters' theses were completed under the direction of the department:

YOHANNIS ABATE

The Moslem Fringes of Eastern Ethiopia: Problems of Integration and Territorial Control. (1972, under the direction of JOHN D. EYRE.)

WILLIAM FRANKLIN AINSLEY

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GEORGE DOUGLAS CARROLL

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DAVID A. HOWARD, JR.

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JAMES ROBERT BUTLER

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JAMES RODNEY YOUNG

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TILDEN MONROE COUNTS, JR.

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GLENNA JEUTONNE BREWER

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G. Douglas Blenkarn

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MARIO C. BATTIGELLI

(See entry under Department of Medicine.)

BETTY EDENFIELD COGSWELL

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JUDITH C. REMBERT

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MICHAEL DOUGLAS FEEZOR

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D. WOODROW BENSON

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C. FRANK STARMER

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JOHN JOSEPH HINDMAN

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ELEANOR FOWLER MCCRICKARD

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The following masters' theses were completed under the direction of the school:

JOAN LEE BROWN

Development of Methods for Identification of Pre-operative Patients' Concerns and Partial Replication of June R. Cassady's Study "Identification of Pre-operative Patients' Concerns about Their Surgery". (1972, under the direction of BETTY SUE JOHNSON.)

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Dissertation and Theses

The following doctoral dissertations were completed under the direction of the Department:

Thanh-Thuy Chau

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James Stephen Kennedy

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Comparison Between the Bioassay and Radioimmunoassay of Porcine Thyrocalcitonin. (1971, under the direction of Cary Wayne Cooper.)

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Robert Wesley Handy

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George Shuford Abernethy

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The following masters' thesis was completed under the direction of the school.

Kun Chae

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DEPARTMENT OF PHILOSOPHY

Elie Maynard Adams

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Dissertations and Theses

The following doctoral dissertations were completed under the direction of the department:

James Creighton Edwards

Persuasion and Discovery: A Study of Wittgenstein's Philosophy. (1972, under the direction of Douglas Clark Long.)

Thomas Herbert Guerry, III

Correspondence, 'True', and 'Truth'. (1972, under the direction of Jay Frank Rosenberg.)

William Dean Hazelton

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Richard Frederick Rickert

Aesthetic Interpreting and Describing: Their Functions in Regard to the 'Trans-Interpretive' Art of Kafka and of Zen. (1972, under the direction of Virgil Charles Aldrich.)

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KENNETH FURMAN ANTLEY

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Dissertations and Theses

The following doctoral dissertations were completed under the direction of the department:

Andrej Cadez

Colliding Black Holes. (1971, under the direction of Bryce Seligman DeWitt.)

William Carridine Collins

Polarized Luminescence and Dipolar Relaxation of the Pb-vacancy Complexes in KC1 and NaC1. (1971, under the direction of James Homer Crawford, Jr.)

Roger Neill Graham

The Everett Interpretation of Quantum Mechanics. (1971, under the direction of Bryce Seligman DeWitt.)

Bert Jack Klein, Jr.

An Ionic Thermocurrent Study of Divalent Ions in Silver Chloride. (1971, under the direction of Lawrence Myer Slifkin.)

Michael George Gray Laidlaw

Quantum Mechanics in Multiply Connected Spaces. (1971, under the direction of Cecile Morette DeWitt.)

William Stover McEver

The Polarization of ^{3}He Particles Elastically Scattered from ^{4}He, ^{9}Be, ^{12}C, and ^{16}O. (1971, under the direction of Edward James Ludwig.)

Carl Evan Nash

A Theory of Simple Metal Surfaces. (1971, under the direction of Sang-Il Choi.)

FRED CHARLES NEWMAN

Pulsed Microwave Resonance Phenomena in TiO_2 and KC1. (1971, under the direction of LAWRENCE GILBERT ROWAN.)

JOHN HANE OVERTON, JR.

Band Structure of Thallium Bromide. (1971, under the direction of JOHN PETER HERNANDEZ.)

STEVEN CARL SYLVESTER

Coulomb Excitation Mössbauer Effect in the 43.8 Kev Transition of Dy^{161}. (1971, under the direction of DIETRICH SCHROEER.)

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Proton Scattering from BE-9 Between 6 and 30 MeV. (1972, under the direction of WILLIAM JACKSON THOMPSON.)

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A Spherical Tensor Formulation of the Theory of Long-Range Intermolecular Forces. (1971, under the direction of PAUL STANCYL HUBBARD, JR.)

DEPARTMENT OF PHYSIOLOGY

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DISSERTATIONS AND THESES

The following doctoral dissertations were completed under the direction of the department:

VERNON CLARK

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elegans. (1971, under the direction of AUGUSTUS TAYLOR MILLER, JR.)

MARY JO BURNS FYFE

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WILLIAM LYMAN JOYNER, III

The Purification of Thrombin and Its Effects on the Cardiovascular System. (1971, under the direction of LLOYD ROBERT YONCE.)

FRANCIS MUNG-HUNG LAI

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MARY KAY EAGER SARJI

Studies on the Relationship between Plasma Coagulation Factors and Platelet Aggregation. (1971, under the direction of JOHN HOWARD FERGUSON.)

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Effect of Hypoxia on Vascular Activity in Skeletal Muscle. (1972, under the direction of LLOYD ROBERT YONCE.)

The following master's theses were completed under the direction of the department:

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The Mechanisms of Calcium Absorption by the Small Intestine. (1971, under the direction of ROBERT GILBERT FAUST.)

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Physiological and Biochemical Responses of the Turtle to Anoxia. (1971, under the direction of AUGUSTUS TAYLOR MILLER, JR.)

DEPARTMENT OF POLITICAL SCIENCE

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FORREST W. YOUNG

(See entries under Psychometric Laboratory.)

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JOSEPH ADELSON

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RICHARD ARNOLD

Relationships among ego and self constructs. (1971, under the direction of W. GRANT DAHLSTROM.)

JAMES BEAN

The group's perception of the dissenter. (1971, under the direction of JOHN THIBAUT.)

JOAN BERNHEIMER

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KATHLEEN BLOOM

The setting event as a determinant of infant learning. (1972, under the direction of MARCUS WALLER.)

KENT BUTZINE

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MICHAEL CANTOR

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JOHN COMPERE

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CARL CORTER

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DIANE DANIEL

The nonequivalence of equivalent lesions. (1971, under the direction of RICHARD KING.)

DAVID DIAMOND

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ROBERT DICK

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SCOTT EVENBECK

Attribution of causality. (1972, under the direction of JOHN THIBAUT.)

PETER EVERETT

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THOMAS FRIEDRICHS

A short written form of the group MMPI. (1972, under the direction of GEORGE WELSH.)

ROBERT FREY

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ANNE FRIEDRICHS

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THOMAS FRIEDRICHS

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PAUL GOLD

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FREDERICK GROTE

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GARY HASKETT

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NANCY HEMMES

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ROBERT HIENZ

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JOHN HOLMES

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ROBERT KERRY JACOBSON

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FRANCIS JARMAN

Needs in speech of college and non-college subjects. (1972, under the direction of W. GRANT DAHLSTROM.)

KENNETH KAUFMAN

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KATSUSHIGE KAZAOKA

Reinforcement properties of attitudes with which one agrees. (1972, under the direction of W. GRANT DAHLSTROM.)

JUDY KONANC

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WILLIAM KORTH

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MARTIN KROVETZ

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DAVID LANGMEYER

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SANDRA LEICHTMAN

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JOE LOWMAN

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RICHARD LUCAS

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JOHN MCMILLAN

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BETH MORSE

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SLOANE PAYNE

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BRYAN PFINGST

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PAUL POTTINGER

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MARILYN RALL

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JOHN RANDOLPH

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FRANK RATH

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HOWARD REES

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HILDA ROSS

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MICHAEL ROSS

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WILLIAM ROUSE

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JOAN SCAGNELLI

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JONATHAN SPEARE

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FAYE STEUER

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RONALD SUITER

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ANNE SUTHERLAND

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JAMES SUTTERER

Alterations of heart rate during aversive conditioning. (1971, under the direction of PAUL OBRIST.)

BARRY TANNER

Modification of male homosexual behavior by avoidance learning. (1972, under the direction of W. GRANT DAHLSTROM.)

GARY A. TAYLOR

Affect relations in mother-schizophrenic son dyads. (1972, under the direction of BARCLAY MARTIN.)

ANDREW J. WALL

Conservation: The sensory experience hypothesis. (1971, under the direction of ERIC SCHOPLER.)

RALPH ZIEFF

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BARRY ZIPPER

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The following masters' theses were completed under the direction of the department:

PETER COTSONAS

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KERRY CROSBY

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SARA ELDER

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SCOTT EVENBECK

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NEHEMIA FRIEDLAND

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DAVID GARRATT

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BRUCE LAYTON

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DANIEL STOKOLS

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JAMES RALPH ABERNATHY

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BERNARD GEORGE GREENBERG

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DISSERTATIONS AND THESES

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VIRGINIA BOARDMAN

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SANDRA J. EYRES

Spouse Social Incongruity and Health. (1972, under the direction of CECIL SLOME.)

FELIX GRUBER

Some Aspects of the Relationship Between Industrialization and Health. (1971, under the direction of JOHN CHARLES CASSEL.)

WILLIAM B. NESER

Risk of Gonorrheal Reinfection in a Public Health Clinic Male Population. (1972, under the direction of CARLYLE DAVID JENKINS.)

THOMAS PRENDERGAST

Cigarette Smoking, Alcohol Use and the Use of Illicit Drugs: Relationships to Each Other, to Life Stress, and to Health and Health Related Behaviors, with Emphasis on the Period of Adolescence. (1972, under the direction of HERMAN ALFRED TYROLER.)

FRANCES THOMAS

Social Involvement and Other Correlates of Psychological Health: A Perspective Study of Persons Over 65. (1972, under the direction of ROBERT WILSON.)

SHIRLEY THOMPSON

Doctor-Patient Relationship and Pregnancy Outcomes. (1972, under the direction of CARLYLE DAVID JENKINS.)

ROBERT VERHALEN

An Historical Perspective Study of the Effects of Certain Personal and Social Characteristics on Self-Selection into Drivers Education and on Subsequent Driving Performance (1972, under the direction of ANTONIE WOUTER VOORS.)

SIRIPATH WATTHANA-KASETER

Geographic Differences in Mortality Rates and Deterioration of Biologic Function with Age. (1972, under the direction of PHILIP SACKSVILLE SPIERS.)

The following masters' theses were completed under the direction of the department:

CAROLYN BARBE

A Preliminary Comparison of Allergic and Non-Allergic Groups of Six-Year Olds. (1971, under the direction of CAROLINE BECKER.)

RAFAEL BORGES

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LOUISE A. BRINTON

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LLOYD COMSTOCK

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MARY B. DALY

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PATRICIA C. DISCHINGER

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ANITA FULCHIERO

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WARREN ARTHUR GALKE

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JOAN P. GRATZ

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MARGARET LEE MOORE

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HARRY T. PHILLIPS

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JANE B. SPRAGUE

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PATRICIA W. WALLER

(See entries under Highway Safety Research Center.)

JEAN G. YATES

(With John T Hughes.) "Health Manpower Planning and Development, Final Report of Course Proceedings," in *HADM Conference Reports,* Number 1. Chapel Hill: Department of Health Administration, 1972. Pp. 98.

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Dissertations and Theses

The following doctoral dissertations were completed under the direction of the department:

David E. Berry

Economic Rationality and Health Care Planning. (1971, under the direction of Morris Schaefer.)

Jahangir Khan

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Jonathan M. Metsch

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KARL E. BAUMAN

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ROBERT A. GREENBERG

(See listing under Department of Pediatrics.)

JAROLSAV FABIAN HULKA

(See listing under Department of Obstetrics and Gynecology.)

LYNN K. KNAUFF

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FRANK ALOYSIUS LODA, JR.

(See listing under Department of Pediatrics.)

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Department of Mental Health

DOROTHEA CROSS LEIGHTON

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ROBERT NEAL WILSON

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DISSERTATIONS AND THESES

The following doctoral dissertation was completed under the direction of the department:

THANGADURAI FRANCIS WILSON

Application of Operant Conditioning Techniques to Institutionalized Severely and Profoundly Retarded Adults. (1972, under the direction of DOROTHEA CROSS LEIGHTON.)

The following masters' theses were completed under the direction of the department:

E. JACKSON ALLISON, JR.

Some Positive Mental Health Aspects of Nongraded Schools. (1971, under the direction of DOROTHEA CROSS LEIGHTON.)

SALLY HART BEUTTEL

The Effect of Supportive Interpersonal Intervention on the Mental Stress of Intensive Care Unit Patients. (1972, under the direction of NORA CLINE.)

GEORGE BOARD III

The Matriarch and the Black Male at Lincoln Community Health Center. (1972, under the direction of DOROTHEA CROSS LEIGHTON.)

CHARLES EARNEST BROOKS

The Health Opinion Survey as an Indicator of Blocked Strivings Among a Group of North Carolina Ministers. (1972, under the direction of DOROTHEA CROSS LEIGHTON.)

SARAH HELEN CARLTON

A Study of an Emergency Service in a North Carolina Mill Town. (1971, under the direction of ROBERT NEAL WILSON.)

GERALD JOHN CECERE

Planning for Mental Health in North Carolina. (1971, under the direction of DOROTHEA CROSS LEIGHTON.)

CAROL ANN COOK

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MERRY ANN COPPAGE

A Descriptive Approach to Improving the Quality of Life for the Mildly Retarded Within the Community. (1972, under the direction of NORA CLINE.)

PAUL A. DUCOMMUN

Evaluative Research in Community Mental Health. (1972, under the direction of NORA CLINE.)

ANN J. EADES

Drug Abuse: A Survey of Pathology and Treatment. (1971, under the direction of NORA CLINE.)

SYLVIA ANN GEORGE

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ALICE GODFREY

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JOHN CAMPBELL GRABAU

The Police, The Community, and Mental Health. (1972, under the direction of ROBERT NEAL WILSON.)

MARY HARWELL

How Children Are Viewed. (1972, under the direction of DOROTHEA CROSS LEIGHTON.)

JEANNE HERNANDEZ

A Two-Pronged Approach to Initiating the Disadvantaged Mother in Preschool Stimulation of Her Children. (1971, under the direction of ROBERT NEAL WILSON.)

SUSHILA KHARE JAIN

Health Professionals and Abortion: A Case Study of a Hospital. (1972, under the direction of ROBERT NEAL WILSON.)

OVELLA E. JONES

School Mental Health. (1972, under the direction of ROBERT NEAL WILSON.)

NANCY JANE KENNEDY

Compartive Treatment and Rehabilitation Programs for Alcoholics in the States of North Carolina and Maryland. (1972, under the direction of JOHN PATON FILLEY.)

DAVID HARRIS KIEL

Exploration of the Dimensions of Community-Based Experiential Learning Programs for North Carolina Undergraduates. (1971, under the direction of ROLF PETER LYNTON.)

MARILYN G. KNOWLES

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VIRGINIA NEWBERN

The Children of the Night, Their Families, and the Promise of the Day. (1971, under the direction of NORA CLINE.)

CAROL JUNE PHILLIPS

Paraprofessional Mental Health Workers. (1972, under the direction of NORA CLINE.)

JUDITH MAY RAPS

Mental Health Evaluation of Latency-Age Psychiatric Patients as Measured by the Health Opinion Survey. (1972, under the direction of NORA CLINE.)

PETER CROLL REICHLE

A Children's Need Survey. (1971, under the direction of ROBERT NEAL WILSON.)

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FRED DANIEL WRIGHT

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JOHN J. B. ANDERSON

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BRYAN R. REEP

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LESTER S. WHITLEY

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DISSERTATIONS

The following doctoral dissertations were completed under the direction of the department:

JOHN WILLIAM BROUGH

Serological Techniques for the Specific Detection of Antibodies to the Yeast-Form of *Histoplasma capsulatum.* (1972, under the direction of JOHN EDGAR LARSH and L. KAUFMAN.)

RAYMOND HAROLD CYPESS

The Role of Delayed Hypersensitivity in Immunity to *Nematospiroides dubius* in Mice. (1971, under the direction of JOHN EDGAR LARSH.)

HUGH-HERBERT EHRHARD

Studies of the Factors and Physiological Responces Affecting H and M Antigen Production by *Histoplasma capsulatum.*

(1971, under the direction of JOHN EDGAR LARSH and L. PINE.)

DOALD ADRIAN ELIASON

Identification of Mosquito Blood Meals: A Comparison of Selected Procedures. (1971, under the direction of JOHN EDGARD LARSH and W. D. SUDIA.)

JAMES LEONARD HOLSTON

Development and Evaluation of an Indirect Hemagglutination Test for the Detection of Influenza A Neuraminidase Antibodies. (1972, under the direction of JOHN EDGAR LARSH and W. R. DOWDLE.)

HERMAN RUDOLPH HUEMPFNER

The Specificity of Tuberculin Fractions for the Detection of Homologous and Heterologous Mycobacterial Infection. (1971, under the direction of JOHN EDGAR LARSH and H. M. VANDIVIERE.)

GEORGE THOMAS KNOWLES

An Improved Antigen for the Complement Fixation Test in Toxoplasmosis. (1971, under the direction of JOHN EDGAR LARSH and K. W. WALLS.)

GEORGE LOUIS LOMBARD

Serological and Physiological Characteristics of Anaerobic, Non-sporeforming, Gram-Negative Bacilli. (1972, under the direction of JOHN EDGAR LARSH and V. R. DOWELL.)

GARY STEPHEN MOORE

A Study of Some Factors Influencing the Growth and Differentiation of Dermatophytes. (1971, under the direction of ELMER F. CHAFFEE.)

COY DALE SMITH

Studies on the ecology of Coccidioides immitis. (1972, under the direction of JOHN EDGAR LARSH and M. L. FURCOLOW.)

DAVID WALTER STICKLE

The Development and Evaluation of Serological Tests for Systemic Candidiasis. (1971, under the direction of JOHN EDGAR LARSH and L. KAUFMAN.)

WALLACE EVANS TURNER

A Study of the Differentiation of *Trichophyton rubrum* and *Trichophyton mentagrophytes* by Morophological, Physiological and Serological Means. (1971, under the direction of JOHN EDGARD LARSH and W. KAPLAN.)

EDWARD RICHARD WILLIAMS

Application of the Flourescent Antibody Technique to the Differentiation of *Aspergillus* species, *Candida* species and Zygomycetes in Parafin Sections of Formalin-Fixed Tissues. (1972, under the direction of JOHN EDGAR LARSH and W. KAPLAN).

Department of Public Health Nursing

MARGARET BAGGETT DOLAN

"President's Column," in *The Nation's Health,* (The official newspaper of the American Public Health Association) November and December, 1972.

JULIA DAY WATKINS

"Professional Nursing Practice in Community Settings," in *Challenge to Nursing Education,* ed., National League for Nursing. Washington, D. C.: N.L.N., 1972. Pp. 9-12.

THESES

The following master's theses were completed under the direction of the department.

LAURE FADEL AZOURI

Public Health Nursing Field Training. (1972, under the direction of MARION HIGHRITER.)

BERYL ABIGAIL DEVANESON

Nursing Education and Family Planning in Tamil Nadu State, India, Perception of Selected Nursing and Medical Leaders. (1972, under the direction of MARIE MCINTYRE.)

ALICE MACKAY

A Descriptive Study of Accidents to Children Aged 1 to 6 Years. (1972, under the direction of ROSE GEORGE.)

SANDRA CATHERINE NEGUS

Mothering, Classroom Behavior and School Absence. (1972, under the direction of CAROLYN A. WILLIAMS.)

CATHERINE LENORE POWELL

Prenatal Classes and the Needs of Pregnant Women. (1972, under the direction of ROSE GEORGE.)

DEPARTMENT OF RADIO, TELEVISION, AND MOTION PICTURES

ROBERT JOSEPH GWYN

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JAMES EZRA HASHIM

Review of Alex Reid, *All I Can Manage, More Than I Could: A Study of the Plays of Samuel Beckett* (London: Dolman Press, 1969), in *Theatre Research,* XI, No. 1 (1971), 52-53.

Notes Towards the Reconstruction of *Le Mystere des Actes des Apotres* as Presented at Bourge, 1536, *Theatre Research,* XII, No. 1, (1972), 29-73.

Aesthetics: Idea, Form and Medium, *Broadcast Course Outlines,* Association for Professional Broadcasting, Vol. III, Part II (1972).

WILLIAM MARION HARDY

Review of Kenneth H. Roberts and Win Sharples, Jr., *A Primer for Filmaking* (New York: Pegasus, 1972), in *Choice* Vol. 9, No. 4 (June 1972), 522.

JOHN PAUL NICKELL

Dance Panels. Direction of a ballet for television, produced in the studios of WRAL in Raleigh, North Carolina, November, 1971.

God's Trombones. Direction of a choral reading and chorus for television, produced in the studios of WRAL in Raleigh, North Carolina, March, 1972.

Pyramus and Thisbe. Direction of a dramatic scene from *A Midsummer Night's Dream* for television, produced in the studios of the Department of Radio, Television and Motion Pictures of the University of North Carolina, Chapel Hill, North Carolina, October, 1972.

A Christmas Carol. Direction of a dramatic reading for television, produced in the studios of WRAL in Raleigh, North Carolina, December, 1972.

CALVIN PRYLUCK

(With R. S. Goodman.) "Tape Recorded Interview as Data for Film History," *Speech Monographs,* XXXIX (1972), 306-11.

Review of Jarvie, *Movies and Society* (New York: Basic Books, 1970) in *Cinema Journal,* XII (Fall 1972), 64-66.

THESES

The following masters' theses were completed under the direction of the department:

ROBERT W. BLOODWORTH, JR.

The Actor: A Screenplay. (1972, under the direction of WILLIAM MARION HARDY.)

CATHERINE WIRTZ BRICKER

Something Old, Something New ....: A Screenplay. (1972, under the dircetion of WILLIAM MARION HARDY.)

VICTOR S. T. CHANG

A Content Analysis of Radio and TV Quarterly of Taiwan 1968-1970. (1972, under the direction of ROBERT JOSEPH GWYN.)

SUSAN CARY FEAMSTER

Robert Radnitz, Creative Film-maker: An Exercise in Film Criticism. (1972, under the direction of EARL RAYMOND WYNN.)

LEE W. HAUSER

A History of the American Forces Vietnam Network, 1962-1972. (1972, under the direction of WESLEY HERNDON WALLACE.)

SANDRA RHODES HUFF

Who Sees the Dental Public Service Announcements?: A

Comparison of the Effectiveness of Television Chewing Gum Ads and Dental Public Service Announcements. (1972, under the direction of ROBERT JOSEPH GWYN.)

FIONA WINIFRED JACKSON

An Analysis of the Films of Norman McLaren. (1971, under the direction of JOHN PAUL NICKELL.)

ROGER DEAN JENNINGS

The Use of Television as a Political Tool by the President: 1952-1968. (1972, under the direction of WESLEY HERNDON WALLACE.)

ALBERT COOPER LITTLEJOHN, JR.

A History of WSPA (AM) 1930-1970. (1971, under the direction of WILLIAM HENRY MELSON.)

LEE M. MANDELL

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Dissertations and Theses

The following doctoral dissertations were completed under the direction of the department:

Tanis Michele Baumann

Wistasce le moine: A Critical Edition. (1971, under the direction of Urban Tigner Holmes, Jr.)

Anthony Modry Beichman

Cyrano de Bergerac and Fontenelle: A Relationship in the Enlightenment, with Special Reference to the Quarrel of the Ancients and Moderns. (1970, under the direction of Frederick Wright Vogler.)

Margaret Munroe Boland

Architectonic Patterns in Adenet li Rois's *Cleomades.* (1971, under the direction of Urban Tigner Holmes, Jr.)

Jack Davis Brown

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WILLIAM ENLOE CUNNINGHAM

The Role of the Middle Ages in Proust. (1971, under the direction of JACQUES HARDRÉ.)

DOROTHY M. DIORIO

Leconte de Lisle: A Hundred and Twenty Years of Criticism. (1971, under the direction of ALFRED GARVIN ENGSTROM.)

OLLIE ROBERT EMORY

Dangeau's *Journal:* A Study in Ritual and Ceremony. (1972, under the direction of GEORGE BERNARD DANIEL, JR.)

ARNHILDA BADÍA GONZÁLEZ-QUEVEDO

Las comedias de Antonio de Zamora. (1971, under the direction of STERLING AUBREY STOUDEMIRE.)

BENITO R. GONZÁLEZ-QUEVEDO

Vida y obra dramática del canónigo Francisco Agustín Tárrega. (1971, under the direction of ALVA VERNON EBERSOLE, JR.)

WILLIAM MCFALL HOLLER

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FRANHER JEAN-BAPTISTE

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MARJORIE TARLETON KIRBY

A Literary History of the Cuban Short Story, 1797-1959. (1971, under the direction of ANDRÉ STANISLAW MICHALSKI, LAWRENCE ALBRIGHT SHARPE, and ALFRED GARVIN ENGSTROM.)

WILLIAM RANSOM LEDFORD

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JUNE MORELAND LEGGE

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JAMES WARING MCCRADY

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RUTH BENSON PAINE

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JEAN-LOUIS GEORGES PICHERIT

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DOREEN SAXE

Twentieth-Century Studies of Racine and the Unconscious. (1972, under the direction of JACQUES HARDRÉ.)

GEORGIA GREY HOOKS SHURR

Journey toward Selfhood: The Role of Jeanne d'Arc in the Artistic Development of Charles Péguy. (1971, under the direction of JACQUES HARDRÉ.)

NANCY MOORE THOMPSON

Types of Narrative Perception in Voltaire's *Contes.* (1971, under the direction of RICHARD LANE FRAUTSCHI.)

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JOSÉ BARÓ

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NANCY L. BEACHLEY

A Study of the Adolescent in the Novels of Carmen Laforet. (1971, under the direction of JANET WINECOFF DÍAZ.)

NORVA MCKNIGHT BOUNDS

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PAUL DANIEL CARTER

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GWENDOLYN CURLEE CHUNN

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ALEYDA Y. DELGADO

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SAM DI MARIA

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BARBARA ELAINE ELLIOTT

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MARÍA ANTONIETA ESPINO

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PAMELA RICE FAIRCLOTH

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CELIA FERNÁNDEZ-DE LA HOZ

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DAVID ANTHONY FLANARY

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MONIQUE MAUSSION FORKNER

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CEMA MILLER POWELL

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LUCINDA HAWES ROGERS

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JAMES WILLIAM ROMER

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MINNIE BLACKMON SANGSTER

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MICHAEL ANTHONY TAYLOR

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SUZANNE CHAMIER WIXSON

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DEPARTMENT OF SLAVIC LANGUAGES

RONELLE ALEXANDER

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VASA D. MIHAILOVICH

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Translator of 15 Serbian Poems in *Mundus Artium,* 4:3 (1971), 10-29.

WALTER NEEF VICKERY

"K voprosu o ritme cezurnogo pjatistopnogo jamba Puskina," *International Journal of Slavic Linguistics and Poetics,* 14 (1971), 134-75.

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Review of George F. Kennan. *The Marquis de Custine, and His Russia in 1839* (Princeton, 1971), in *Slavic and East European Journal,* Vol. 30, No. 4 (1971), 527-28.

Theses

The following master's theses were completed under the direction of the department:

Josephine Z. Woll

Three narrative voices: Popriscin, Culkaturin, The Under Ground Man (1972, under the direction of Paul Debreczeny.)

Paul A. Jagasich

A Descriptive Analysis of the Use of the Future Tenses in Contemporary Written Polish (1971, under the direction of T. B. Gasinski.)

SCHOOL OF SOCIAL WORK

Arthur Emil Fink

"Authority in the Correctional Process," in *Behavioral Science and Modern Penology,* ed., William H. Lyle. Spring, Illinois: Charles C. Thomas, 1972. Pp. 223-37.

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Maeda J. Galinsky

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ALAN KEITH-LUCAS

Editor, Chapel Hill Workshop Reports, 1971 and 1972.

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JANICE H. SCHOPLER

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Jeanne C. Biggar

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William David Davis

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Michael S. Flynn

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John Henry Freeman

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BERNARD GILMAN

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EDITH MCCANDLESS BOLICK

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SUJIT KUMAR BASU

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NANAK CHAND

Sequential Tests of Composite Hypotheses. (1972, under the direction of NORMAN LLOYD JOHNSON.)

KALYAN DUTTA

On the Asymptotic Properties of Some Robust Estimators in Certain Multivariate Stationary Autoregressive Processes. (1971, under the direction of PRANAB KUMAR SEN.)

THOMAS MICHAEL GERIG

Non-parametric Estimation and Testing Procedures and Multivariate Two-Way Layouts. (1971, under the direction of PRANAR KUMAR SEN.)

ANTONIO FEDERICO GUALTIEROTTI

Some Problems Related to Equivalence of Measures: Extension of Cylinder Set Measures and a Martingale Transformation. (1972, under the direction of CHARLES RAY BAKER.)

SAMUEL MAYNARD HEFT

Spreads in Projective Geometry and Associated Designs. (1971, under the direction of RAJ CHANDRA BOSE.)

VINOD PRAKASH MANGLIK

On Some Binary Systems Useful in the Theory of Search. (1972, under the direction of INDRA MOHAN CHAKRAVARTI.)

FLAVIO WAGNER RODRIGUES

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NARASIMHADEVARA VIJAYADITA

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DEPARTMENT OF ZOOLOGY

MICHAEL ALAN BLEYMAN

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(With J. B. Whitney and J. C. Lucchesi.) "The Polyribosomes of *Drospohila melanogaster:* Isolation and Characterization," *Experimental Cell Research,* 64 (1971), 24-34.

(With C. W. Christopher and M. E. Jones.) "Phenylalanine t-RNA Synthetase from *Drosophila melanogaster.* I. L-phenylalanine Activation Optima for pH, Temperature and Mg^{2+} Estimation of Molecular Weight," *Biochimica et Biophysica Acta,* 228 (1971), 682.

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ALAN ERNEST STIVEN

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Dissertations and Theses

The following doctoral dissertations were completed under the direction of the department:

William Lee Bishchoff, Jr.

Genetic Organization in *Drospohila melanogaster:* Complementation and Fine Structure Analysis of the Deep Orange Locus. (1971, under the direction of John Charles Lucchesi.)

Charles Nelson Boehms

The Influence of Temperature Upon Embryonic Diapause and Seasonal Regulation in *Sympetrum vicinum* (Hagan) (Odonta: Libellulinea). (1971, under the direction of Charles Edwin Jenner.)

Michael John Canoy

Deoxyribonucleic Acid in Ecosystems. (1972, under the direction of Howard Thomas Odum.)

Charles William Christopher

Purification and Characterization of Phenylalanine-tRNA Synthetase from *Drosophila melanogaster.* (1971, under the direction of Darrel Wayne Stafford.)

Nancy Claire Edwards

Macromolecular Patterns in the Development of the Marine Hydroid, *Hydractinia echinata.* (1971, under the direction of Harvey Eugene Lehman.)

John Randolph Hall, III

Control of Distribution of *Derocheilocaris typica* on Sandy Beaches (Crustacea, Mystacocarda.) (1971, under the direction of Charles Edwin Jenner.)

Byron Ross Ingram, Jr.

The Seasonal Ecology of Two Species of Damselfles (Odonata: Zygoptera) with Special Reference to the Effects of Photoperiod and Temperature on Nymphal Development. (1971, under the direction of Charles Edwin Jenner.)

Robert Alden Kelly

The Effects of Fluctuating Temperature on the Metabolism

of Freshwater Microcosms. (1971, under the direction of HOWARD THOMAS ODUM.)

WILLIAM LEONARD KRUCZYNSKI

The Relationship of the Pea Crab, *Pinnotheres maculatus* Say, with the Scallops, *Argopecten irradians Concentricus* (Say) and *Argopecten gibbus* (Linne). (1971, under the direction of AUSTIN BEATTY WILLIAMS.)

ERIC WALTER LINDGREN

Systematics and Ecology of North Carolina Marine Sandy-Beach Harpacticoida (Copepoda: Crustacea). (1972, under the direction of CHARLES EDWIN JENNER.)

DAVID ROSS MCCLAY, JR.

Specificity in Surface Adhesion During Sponge Cell Reaggregation. (1971, under the direction of HARVEY EUGENE LEHMAN.)

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Isolation and Characterization of Sea Urchin Ribosomal Satellite DNA. (1971, under the direction of DARREL WAYNE STAFFORD.)

MARY BETH THOMAS

A Fine-structural Analysis of the Spermatozoa of *Stylochus zebra* (Turbellaria, Polycladida). (1971, under the direction of DONALD PAUL COSTELLO and CATHERINE HENLEY.)

JOHN BARRY WHITNEY, III

Phenogenetics of *Drosophila melanogaster* fumarase. (1972, under the direction of JOHN CHARLES LUCCHESI.)

The following masters' theses were completed under the direction of the department:

NIKKI MEITH AVCIN

Sublethal Effects of DDT on the Behavioral Responses of Chemical and Tactile Stimuli. (1972, under the direction of ALPHONSE F. CHESTNUT.)

RUSSELL PAUL DARST, III

Tryptophan Pyrrolase in *Drosophila*. (1971, under the direction of JOHN CHARLES LUCCHESI.)

ELLEN FOSCUE

An Investigation of the Activity of N-acetyl-B-glucosam-

inidase in the Midgut of the Flesh-fly, *Sarcophaga bullata,* Up to and Through Pupation. (1972, under the direction of DONALD WILLIAM MISCH.)

MARGARET ELIZABETH FRANSEN

Primordial Germ Cell Problem: A Survey of Sex Cell Origin in the Metazoa. (1971, under the direction of HARVEY EUGENE LEHMAN.)

JAN HUGUENIN

Localization and Characterization of Cardio-acceleratory Substances in the Cockroach, *Periplaneta americana.* (1971, under the direction of NED ALAN SMITH.)

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The Role of Microarthropods in the Decomposition of Forest Litter. (1971, under the direction of ALAN ERNEST STIVEN.)

MARTHA ANN SMITH

Productivity of Marine Ponds Receiving Treated Sewage. (1971, under the direction of HOWARD THOMAS ODUM.)

WADE HAMPTON BARNES SMITH

Distribution of the Coquina Clam, *Donax variabilis,* on a North Carolina Beach. (1971, under the direction of ALAN ERNEST STIVEN and WILLIAM WOODS.)

PART II

RESEARCH ORGANIZATIONS

THE CENTER FOR ALCOHOL STUDIES

Director: JOHN A. EWING

The Center for Alcohol Studies was established in 1970 with State support and the mandate to coordinate and perform studies related to problems of alcohol, alcoholism and alcoholic offenses. In addition to undertaking such studies the Center has attempted to facilitate research communications among interested faculty members and others from without the University. One such endeavor is the monthly meeting of the Forum on Alcohol.

JOHN A. EWING

(See entries under Department of Psychiatry.)

BEATRICE A. ROUSE

(With J. A. Ewing.) Editor, "Law and Drinking Behavior," *Center for Alcohol Studies Monograph* (January 1971.)

(With W. E. Bakewell, Jr., J. A. Ewing and C. M. Cochrane.) "Experimental Psychiatric Clerkship for Pre-Freshman Medical Students," *Journal of Medical Education,* 46 (1971), 156-63.

(With J. R. Partridge, T. C. Spiegel, and J. A. Ewing.) "Therapeutic Abortion: A Study of Psychiatric Applicants at North Carolina Memorial Hospital," *North Carolina Medical Journal,* 32 (1971), 131-36.

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CENTER FOR RESEARCH IN PHARMACOLOGY AND TOXICOLOGY

Professor: THOMAS C. BUTLER, Director.

Associate Professors: DAVID J. HOLBROOK, JR., DORIS T. POOLE.

Assistant Professors: KENNETH H. DUDLEY, JAMES B. GRIFFIN[1].

Instructors: RAYMOND D. MAGUS[2], JERRY A. SMITH[3].

The Center for Research in Pharmacology and Toxicology is supported by a grant from the National Institute of General Medical Sciences of the National Institutes of Health. It is administratively a part of the School of Medicine, and members of its staff have appointments in appropriate departments. The Center is temporarily housed in a building rented from the Research Triangle Institute. Permanent quarters will be in a building under construction on the Chapel Hill Campus.

ANTHONY FRANCIS BARTHOLOMAY

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(With C. F. Lefler.) "Inhibition of Polypeptide Synthesis by Chloroquine and Primaquine in Rat Liver *in Vitro,*" *Federation Proceedings,* 31 (March-April 1972), 569.

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RAYMOND DENNIS MAGUS

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DISSERTATION AND THESES

The following doctoral dissertation was completed under the direction of the Center.

CONSTANCE FARTHING LEFLER

The Inhibition of Aminoacylation and Polypeptide Syn-

thesis by Chloroquine and Primaquine in Rat Liver *in Vitro*. (1972, under the direction of DAVID J. HOLBROOK, JR.)

The following master's thesis was completed under the direction of the center.

ROGER CRIGHTON FIELD

The Effects of Chloroquine and Primaquine on the Incorporation of Precursors into RNA and Protein of Mammalian Liver. (1972, under the direction of DAVID J. HOLBROOK, JR.)

CHILD DEVELOPMENT RESEARCH INSTITUTE

Director: CECIL G. SHEPS

Assistant Director: DONALD M. WOOD

The University of North Carolina Child Development Institute was established in 1967 as one of the twelve national Mental Retardation Research Centers sponsored, in part, by the National Institute of Child Health and Human Development.

The U.N.C. Child Development Institute provides the program opportunity for scientists from many disciplines to engage in research and research training in the area of child development and mental retardation. Included as relevant and highly important are such factors as the retarding effects of cultural deprivation and emotional disturbance.

The Institute consists of two separate, but coordinated, research centers, each representing an interdisciplinary approach to research with retarded or potentially retarded children. The Frank Porter Graham Child Development Research Center (F.P.G. Center) places primary emphasis upon the psychological, social, and educational aspects of child development. Particular attention is called to early cultural and emotional factors as they may affect the development of a population of children, the bulk of which could ordinarily be expected to be environmentally deprived of these elements. The Biological Sciences Research Center (BSRC) emphasizes the biological and medical aspects of development through research and research training concerned with the development and maturation of the central nervous system and the bio-medical factors affecting its proper functioning. Basic research on infrahuman populations and clinical research on the

biology of the developing and/or retarded central nervous system are included. The Center's Division for Disorders of Development and Learning is devoted to training medical, scientific, and paramedical personnel in the diagnosis and management of children with developmental deficits. The retarding effects of emotional disturbance are under study by the Division of Child Psychiatry Research.

BIOLOGICAL SCIENCES RESEARCH CENTER
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LORCAN ALOYSIUS O'TUAMA

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(See entries under Department of Psychology.)

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THE CAROLINA POPULATION CENTER

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The Carolina Population Center coordinates, stimulates, and supports population research activities throughout the University. It provides population reference services, sponsors special training and research seminars, and assists in building population studies into University departmental courses. It maintains close relationships with population research and family planning programs in several geographic areas, including: the State of North Carolina and the Southeastern states of the United States, Africa, Latin America, India, Thailand, Iran, and the United Arab Republic.

Research activities fall into the following general subject areas: 1) Population Theory and Measurement - theoretical studies on sociological, economic, psychological and health factors in population dynamics, and statistical studies on measurement on models of population change. 2) Population Policy-studies of ethical, legal, and political aspects of population policy development. 3) Demographic Studies - analyses

of specific population groups, studies in urban ecology, migration, and economics of fertility. 4) Biomedical Research - studies on relationships between family size and health, immunology of reproduction, and contraceptive methods. 5) Family Life Education - studies in family sociology, sexual norms and practices in the Southeastern United States, and knowledge and attitudes among school officials. 6) Family Planning Program Development - studies on administrative problems, educational processes, evaluation procedures, and relevant training and consultation methods. 7) Systems Analysis - exploration of the applicability of systems analysis to problems of population dynamics.

The Center has a Policy Board made up of University Administrative officials and an Academic Programs Council, composed of Chairmen of eighteen departments most clearly identified with population studies.

Associates, listed below, with their departmental affiliations, are those faculty members engaged in population research and teaching. While appearing appropriately in departmental listings, their population-related publications are listed here. James R. Abernathy, Biostatistics; J. Stacy Adams, Business Administration; James E. Allen, Health Administration; Donald N. Anderson, Sociology, Mars Hill College; Richmond K. Anderson, International Programs Office, Carolina Population Center; Mark I. Applebaum, Psychology; M. Dale Arvey, Biology, University of North Carolina at Charlotte; Edward E. Azar, Political Science; Lloyd Bacon, Sociology/Anthropology, Western Carolina University; Marshall C. Balfour, Health Administration; Enrique A. Baloyra, Political Science; Karl E. Bauman, Maternal and Child Health; Norton W. Beach, Education; Walter H. Bell, Linguistics; D. Gordon Bennett, Geography, University of North Carolina at Greensboro; H. Stanley Bennett, Anatomy; Edward M. Bergman, City and Regional Planning; Sandra L. Berry, Nursing; V. Betty Berryhill, Nursing; Stephen Birdsall, Geography; Robert R. Blake; Micheline Boyer, Public Health Nursing; Louie A. Brown, Sociology, Appalachian State University; Robert T. Brown, Psychology; Hubert W. Burden, Anatomy, East Carolina University; Noel-David Burleson; Robert Burnight, Carolina Population Center; William C. Byrd, Allied Health, East Carolina University; William B. Clifford, Sociology/Anthropology, North Carolina State University; Richard L. Clinton, Political Science; Charles R.

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Thomas E. Steahr and Calvin F. Schmid. "College Student Migration in the United States," Journal of Higher Education, XLIII:6 (June 1972). Pp. 441-63.

J. Richard Udry, Robert Burnight, and Naomi M. Morris. "Pregnancy Testing as a Fertility Measurement Technique: A Preliminary Report on Field Results," *American Journal of Public Health,* 61:2 (February 1971). Pp. 344-52.

J. Richard Udry, Karl Bauman, and Charles Chase. "Skin Color, Status and Mate Selection," *American Journal of Sociology,* 76:4 (January 1971). Pp. 722-33.

J. Richard Udry and Naomi M. Morris. "A Spoonful of Sugar Helps the Medicine Go Down," *American Journal of Public Health,* (October 1971). Pp. 776-85.

Peter Uhlenberg. "Demographic Correlates of Group Achievement: Contrasting Patterns of Mexican-Americans," *Demography,* 9:1 (February 1972). Pp. 119-28.

COMPUTATION CENTER

Director: JAMES J. BATTER

Associate Director: WILLIAM C. HETZEL

The Computation Center provides the general purpose computer services for instruction and research. Major facilities include an IBM 370/165 at the Triangle Universities Computation Center and an on-campus IBM 160/75. Emphasis has been placed on providing batch and interactive computing but specialized services in computer graphics and Computer Assisted Instruction are also supported.

Triangle Universities Computation Center is jointly sponsored by Duke University, North Carolina State University and the University of North Carolina at Chapel Hill. In addition to providing extensive services to the three supporting institutions, it provides the major computing facilities for many of the other campuses of the University of North Carolina and other colleges throughout the state through the North Carolina Educational Computing Service.

Numerous short courses, seminars, notices, memoranda and the "Computation Center Newsletter" keep the user community informed on services provided by the Center. Basic research is conducted in the areas of computer networking, text editing, program test methods and modifications to operating systems.

JAMES J. BATTER

(With Frederick P. Brooks, Jr.) "GROPE-1: A Computer Display to the Sense of Feel," in *Information Processing 71.* Amsterdam: North-Holland Publishing Company, 1972. Pp. 759-763. (Presented at the International Federation of Information Processing 71, Ljubljana, Yugoslavia, 1971.)

WILLIAM C. HETZEL

Editor, *Program Test Methods.* New Jersey: Prentice Hall Englewood Cliffs, 1972. Pp. 311.

HEALTH SERVICES RESEARCH CENTER

Acting Director: CONRAD SEIPP

The Health Services Research Center (HSRC) is a multidisciplinary, Universitywide center, originally established with the mandate to explore and evaluate alternative ways to provide optimum health services to people at the community level. The Center has supported in whole or in part a number of research and demonstration projects, and it functions as a coordinating and facilitating mechanism, seeking to assist others in the identification of opportunities for relevant research and demonstrations in the delivery of health services.

During 1972, the HSRC sharpened its focus toward three areas: community studies, primary care practice, and rural health services research. At the close of 1972, there were some 30 research associates identified with the Center. The section below lists publications of present and former associates of the HSRC during the period January 1, 1971, through December 31, 1972.

HARVEY E. ARCHER

(See entries under Department of Hospital Administration.)

(With Abram L. Van Horn.) *Hospital-Based Long-Term*

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FRANK CORDLE

"The Automation of Clinical Records: A Review With Special Emphasis on the Automation of Office Records in the Primary Medical Care Setting," *Medical Care,* 10 (November-December 1972), 470-80.

ELIZABETH JACKSON COULTER

(See entries under Department of Biostatistics.)

CHESTER WILLIAM DOUGLASS

(See entries under School of Dentistry.)

(With J. V. Pergrin and B. H. Gray.) *Practice Setting Profile Study.* Chapel Hill: Health Services Research Center, 1972. Pp. ii, 94.

JOHN T. GENTRY

(See entries under Department of Health Administration.)

BRADFORD H. GRAY

(See entries under Department of Sociology.)

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BARBARA SORENSON HULKA

(See entries under Department of Epidemiology.)

ARNOLD D. KALUZNY

(See entries under Department of Health Administration.)

ROY L. LINDAHL

(See entries under School of Dentistry.)

MALCOLM MACNAIR

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DONALD L. MADISON

(See entries under Department of Family Medicine.)

E. SHEPLEY NOURSE

(With M. L. Moore and M. M. Parker.) *Form and Func-*

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JESSIE V. PERGRIN

(With B. H. Gray and C. W. Douglass.) *Practice Setting Profile Study.* Chapel Hill: Health Services Research Center, 1972. Pp. ii, 94.

RICHARD M. SCHEFFLER

(See entries under Department of Economics.)

CONRAD SEIPP

(With C. G. Sheps.) "The Medical School, Its Products and Its Problems," *The Annals of the American Academy of Political and Social Science,* 399 (January 1972), 38-49.

"Social Scientists and the Process of Evaluation," *Proceedings, Regional Medical Programs National Conference and Workshop on Evaluation, 1970.* U.S. Department of Health, Education, and Welfare (DHEW Publication HSM 71-7010), 122-25.

CECIE G. SHEPS

"Trends in Hospital Care," *Inquiry,* 8 (March 1971), 27-31.

(With Conrad Seipp.) "The Medical School, Its Products and Its Problems," *The Annals of the American Academy of Political and Social Science,* 399 (January 1972), 38-49.

"The Influence of Consumer Sponsorship on Medical Services," *Milbank Memorial Fund Quarterly,* 50 (October 1972), Part 2, 41-69.

"What Gives Meaning to the Interdependence of Hospitals," *Bulletin of the New York Academy of Medicine,* Second Series, 48 (December 1972), 1481-85.

KITTY SHIMONI

Utilization and Cost Patterns in the Charlotte Model Cities Demonstration Medical-Dental Insurance Program. Chapel Hill: Health Services Research Center, 1972. Pp. v, 74.

JANE B. SPRAGUE

(See entries under Department of Health Administration.)

ABRAM L. VAN HORN

(With H. E. Archer.) *Hospital-Based Long-Term Care Units in North Carolina.* Chapel Hill: Department of Hospital Administration, 1972. Pp. ix, 93.

JAMES E. VENEY

(See entries under Department of Health Administration.)

THE UNIVERSITY OF NORTH CAROLINA HIGHWAY SAFETY RESEARCH CENTER

The Highway Safety Research Center (HSRC) was established within the University of North Carolina by an act of the 1965 General Assembly, and exists as a public service unit whose purposes are to conduct research evaluating state highway safety programs, to offer training services for state and local highway safety officials, and to conduct independent research concerning relevant highway safety topics.

HSRC's role in U. N. C. is to provide a staff nucleus familiar with the subject matter of the auto accident field. Through a multi-disciplinary staff, HSRC provides research services that cut across the areas of several disciplines. Communication between HSRC and other departments is facilitated through joint appointments.

HSRC participates in other standard University functions by providing a research setting in which graduate students can gain research experience, by giving lectures in other programs within U. N. C., by membership on thesis committees, by joint appointments and by conducting institutes and workshops.

HSRC works very closely with state and local highway safety agencies. In a real sense HSRC's "clients" are state and local officials. HSRC provides research, development, evaluation, training, and consultative services to such agencies as the State Highway Patrol, the Department of Motor Vehicles Driver License Division, State Accident Records Agency, and Motor Vehicle Inspection Division and to the Governor's

Highway Safety Program. Officials of these agencies call on HSRC for a variety of planning, program and research functions.

JOHN A. ALLEN, JR.

(With Stanley M. Soliday.) *Hazard Perception in Automobile Drivers: Age Differences.* Chapel Hill: University of North Carolina Highway Safety Research Center, January 1972. Pp. i, 6.

(With Stanley M. Soliday.) *Age and Sex Factors in the Control of Automobiles.* Chapel Hill: University of North Carolina Safety Research Center, February 1972. Pp. ii, 14.

(With Stanley M. Soliday.) *Control Responses of Automobile Drivers Relative to Type of Highway and Steering Normally Used.* Chapel Hill: University of North Carolina Highway Safety Research Center, March 1972. Pp. iv, 13.

(With Robert K. Wood and James F. Wright.) *An Investigation of the Accuracy of Ortho-Rater Perimeter Measurements.* Chapel Hill: University of North Carolina Highway Safety Research Center, May 1972. Pp. 12.

THEODORE E. ANDERSON

Shoulder Belt Utilization. Chapel Hill: University of North Carolina Highway Safety Research Center, February 1971. Pp. 21.

B. J. CAMPBELL

(With J. P. Foley and E. A. Pascarella.) *Bicycle Riding and Accidents Among Youths: A Summary Report.* Chapel Hill: University of North Carolina Highway Safety Research Center, July 1971. Pp. 21.

(With Donald N. Levine.) *Effectiveness of Lap Seat Belts and the Energy Absorbing Steering System in the Reduction of Injuries.* Chapel Hill: University of North Carolina Highway Safety Research Center, November 1971. Pp. vi, 42. Also published in *Journal of Safety Research,* 4 (September 1972), 106-18.

(With Forrest M. Council, Donald W. Reinfurt and J. Richard Stewart.) *A Review of the Stastical Methodology Used in Spot Improvement Programs.* Chapel Hill: University of North Carolina Highway Safety Research Center, April 1972. Pp. 43.

FORREST M. COUNCIL

(With B. J. Campbell, Donald W. Reinfurt and J. Richard Stewart.) *A Review of the Statistical Methodology Used in Spot Improvement Programs.* Chapel Hill: University of North Carolina Highway Safety Research Center, April 1972. Pp. 43.

PETER B. IMREY

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THEMIS R. JOHNS

(With Edward A. Pascarella.) *An Assessment of the Limited Driving License Amendment to the North Carolina Statutes Relating to Drunk Driving.* Chapel Hill: University of North Carolina Highway Safety Research Center, April 1971. Pp. ii, 19.

(With John A. Allen, Jr.) *Project Report: Driver License Road Testing.* Chapel Hill: University of North Carolina Highway Safety Research Center, October 1971. Pp. iii, 144.

(With Douglas E. Neil.) *Inter-Examiner Reliability in the Determination of Lateral Visual Field.* Chapel Hill: University of North Carolina Highway Safety Research Center, April 1972. Pp. 10.

GARY G. KOCH

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(With Donald W. Reinfurt.) "The Analysis of Complex Contingency Table Data from General Experimental Designs and Sample Surveys," in *Proceedings of the Sixteenth Conference on the Design of Experiments in Army Research Development and Testing.* Durham: U. S. Army Research Office, August 1971. Pp. 453-527.

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DOUGLAS E. NEIL

(With Themis R. Johns.) *Inter-Examiner Reliability in the Determination of Lateral Visual Field.* Chapel Hill: University of North Carolina Highway Safety Research Center, April 1972. Pp. 10.

EDWARD A. PASCARELLA

(With Themis R. Johns.) *An Assessment of the Limited Driving License Amendment to the North Carolina Statutes Relating to Drunk Driving.* Chapel Hill: University of North Carolina Highway Safety Research Center, April 1971. Pp. ii, 19.

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DONALD W. REINFURT

(With Elizabeth G. House and Donald N. Levine.) *Periodic Motor Vehicle Inspection in North Carolina: A Follow-Up Study.* Chapel Hill: University of North Carolina Highway Safety Research Center, November 1971. Pp. 51.

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(With Gary G. Koch.) "The Analysis of Categorical Data from Mixed Models," *Biometrics,* 27 (March 1971), 157-73.

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J. RICHARD STEWART

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FRANK J. VILARDO

Vehicle Damage Scale for Traffic Investigators: An Investigation of Its Use and Potential for Predicting Driver Injury. Chapel Hill: University of North Carolina Highway Safety Research Center, August 1972. Pp. v, 21.

PATRICIA F. WALLER

Editor. *Highway Safety: The Anatomy of a Problem.* North Carolina Symposium on Highway Safety, vol. 1. Chapel Hill: University of North Carolina Highway Safety Research Center, 1972. Pp. xiii, 138.

Editor. *Highway and Traffic Safety: A Problem of Definition.* North Carolina Symposium on Highway Safety, vol. 2. Chapel Hill: University of North Carolina Highway Safety Research Center, 1972. Pp. xii, 113.

Editor. *Alcohol and Highway Safety.* North Carolina Symposium on Highway Safety, vol. 3. Chapel Hill: University of North Carolina Highway Safety Research Center, 1972. Pp. xv, 81.

Editor. *Mushrooming Technology: New Directions in Highway Safety.* North Carolina Symposium on Highway Safety, vol. 4. Chapel Hill: University of North Carolina Highway Safety Research Center, 1972. Pp. xvi, 117.

Editor. *The Young Driver: Reckless or Unprepared?* North Carolina Symposium on Highway Saefty, vol. 5. Chapel Hill: University of North Carolina Highway Safety Research Center, 1972. Pp. xvi, 144.

Editor. *Crashworthiness: Safety through Automotive Design.* North Carolina Symposium on Highway Safety, vol. 6. Chapel Hill: University of North Carolina Highway Safety Research Center, 1972. Pp. xiv, 86.

(With Paul G. Shinkman.) *Instructor's Manual for Mor-*

gan and King: Introduction to Psychology. 4th edition. New York: McGraw-Hill, 1971. Pp. 193.

(With Elizabeth G. House.) *Accuracy of Drivers' Estimates of Vehicle Mileage Driven.* Chapel Hill: University of North Carolina Highway Safety Research Center, November 1971. Pp. ii, 23.

(With Gary G. Koch.) *Characteristics of North Carolina Drivers.* Chapel Hill: University of North Carolina Highway Safety Research Center, December 1971. Pp. vi, 22.

An Analysis of Motorcycle Accidents with Recommendations for Licensing and Operation. Chapel Hill: University of North Carolina Highway Safety Research Center, August 1972. Pp. iii, 20.

(With James P. Foley and Dwight W. Jeffrey.) *Stress and Driving: The Relationship Between Life Crisis Experiences and a Sudden Deterioration in Driving Record.* Chapel Hill: University of North Carolina Highway Safety Research Center, October 1972. Pp. 124.

Theses

The following masters' theses were completed under the direction of the department:

James P. Foley

Bicycle Exposure and Accidents in an Urban Area. (1971, under the direction of B. J. Campbell.)

John C. LeGarde

The Effects of a Stressful Film on Performance and Mood. (1971, under the direction of John J. Harnett.)

INSTITUTE OF MARINE SCIENCES

Director: Alphonse F. Chestnut

The Institute of Marine Sciences, located at Morehead City, was established in 1947 as the Institute of Fisheries Research. The basic purpose of the Institute is to conduct research on Marine organisms and related phenomena, seeking knowledge toward development of principles to govern the utilization of natural resources in the estuaries and near-shore ocean. Long-term studies of the physical, chemical and

biological conditions and their influence upon life histories and behaviour of various species of marine organisms are needed to produce factual information. Current research activities include ecological, systematic and controlled laboratory studies of marine fungi, fishes, crustaceans, mollusks and vertebrates. Biological investigations and environmental assessments are directed toward physical alterations, productivity and pollutants which influence the natural resources in the estuarine system. Research results are published in scientific journals, technical publications, special bulletins and are made available to governmental agencies and to the general public.

Research facilities of the Institute are made available to faculty and graduate students from various departments of the University with interests in Marine Sciences. These activities eventually lead to publications by individuals and groups.

STEPHEN A. BORTONE

"Ontogenetic and Behavioral Color Patterns in Sand Perch, (Oisces: Serranidae)," *Association of Southeastern Biologists Bulletin,* 18, No. 2 (April 1971), 28.

"Pugheadedness in the Vermillion Snapper, *Rhomboplites aurorubens* in the Northern Gulf of Mexico," *Transactions of American Fisheries Society,* 100, No. 2 (April 1971), 366-68.

"Ecological Aspects of Two Species of Parasitic Copepods New to the Tidewater Silverside *Menidia beryllina* (Cope)," *Journal of Elisha Mitchell Scientific Society,* 87, No. 3 (1971), 120-23.

"Studies on the Biology of the Sand Perch, *Diplectrum formosum* (Perciformes: Serranidae)," *Florida Department of Natural Resources, Technical Series,* No. 65 (October 1971), 1-27.

"Age and Growth of the Sand Perch, *Diplectrum formosum* (Pisces: Serranidae) from North Carolina," *Association of Southeastern Biologists Bulletin,* 19, No. 2 (April 1972), 55.

"Recent Capture of *Phoxinus oreas* (Pisces: Cyprinidae) from the Yadkin-Pee Dee River Drainage, North Carolina," *Journal of Elisha Mitchell Scientific Society,* 88, No. 1 (1972), 28-29.

"Pugheadedness in the Pirate Perch *Aphredoderus say-*

anus (Pisces: Aphredoderidae) with Implications on Feeding," *Chesapeake Science,* 13, No. 3 (September 1972), 231-32.

ALPHONSE F. CHESTNUT

(With Edward J. Kuenzler.) "Structure and Functioning of Estuarine Ecosystems Developing with Treated Sewage Wastes," *Annual Report for 1970-1971 to National Oceanographic and Atomspheric Agency, Office of Sea Grant Programs, Grant No. G.H. 103* (February 1971), 345.

JAMES K. DOOLEY

Fishes Associated with the Pelagic Sargassum Complex, with a Discussion of the Sargassum Community. *Contributions Marine Science, Univ. Texas,* 16, (March 1972), 1-32.

WILLIAM EARL FAHY

"Influence of Temperature Change on Number of Vertebrae and Caudal Fin Rays in *Fundulus majalis* (Walbaum)," *Journal du Conseil International pour l'Exploration de la Mer,* 34 (March 1972), 217-31.

JAN JUSTUS KOHLMEYER

(With Erika Kohlmeyer.) *Synoptic Plates of Higher Marine Fungi. An Identification Guide for the Marine Environment.* Third revised and enlarged edition. Lehre: J. Cramer, 1971. Pp. 87, Pls. 1-16.

"Fungi from the Sargasso Sea," *Marine Biology,* 8 (March 1971), 344-50.

"Ein neuer Ascomycet auf Hydrozoen im Südatlankik," *Berichte der Deutschen Botanischen Gesellschaft,* 83 (June 1971), 505-9.

(With Erika Kohlmeyer.) "Marine Fungi from Tropical America and Africa," *Mycologia,* 63 (August 1971), 831-61.

"Annotated Checklist of New England Marine Fungi," *Transactions of the British Mycological Society,* 57 (December 1971), 473-92.

"Marine Fungi Deteriorating Chitin of Hydrozoa and Keratin-like Annelid Tubes," *Marine Biology,* 12 (February 1972), 277-84.

(With Erika Kohlmeyer.) "Permanent Microscopic Mounts," *Mycologia,* 64 (June 1972), 666-69.

(With Erika Kohlmeyer.) "Is *Ascophyllum nodosum* Lichenized?" *Botanica Marina,* 15 (June 1972), 109-12.

" A Revision of Halosphaeriaceae," *Canadian Journal of Botany,* 50 (September 1972), 151-63.

(With Erika Kohlmeyer.) "A new genus of Marine Ascomycetes on *Ulva vexata* Setch. et Gard.," *Botanische Jahrbücher,* 92 (October 1972), 429-32.

"Quick-freeze spray causing oil-like residue in microscope mounts," *Transactions of the American Microscopical Society,* 91 (October 1972), 607-8.

WILLIAM L. KRUCZYNSKI

The Effect of the Pea Crab, *Pinnotheres maculatus* Say, on Growth of the Bay Scallop, *Argopecten irradians concentricus* (Say). *Chesapeake Science,* 13, (No. 3) (September, 1972), 218-20.

HUGH JUDSON PORTER

(With Jim Tyler.) "Sea Shells Common to North Carolina," *Information series. North Carolina Department of Natural and Economic Resources Division of Commercial and Sports Fisheries,* (November 1971), 1-36.

"North Carolina's Offshore Scallop Fishery - A Bonanza to Shell Collectors," *North Carolina Shell Club Bulletin,* 6 (November 1971), 24-25.

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(With A. B. Williams.) "A Ten-year Study of Meroplankton in North Carolina Estuaries: Occurrence of Postmetamorphal Bivalves," *Chesapeake Science,* 12 (March 1971), 26-32.

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"Recent Advances in Clam Aquaculture," *American Malacological Union, Inc., Bulletin for 1971, 1972.* Pp. 16.17.

"Shell Collecting from Stomachs of the Sea-star Genus *Astropecten,*" *New York Shell Club Notes,* 180 (March 1972), 2-4.

(With D. A. Wolfe.) "Mollusca from the North Carolina Commercial Fishery Grounds for the Calico Scallop, *Argopecten gibbus* (Linne)," *Journal de Conchyliologie,* 109 (1972), 91-109.

FRANK JOSEPH SCHWARTZ

Editor, *Copeia,* 1971-1972.

Associate editor, *Chesapeake Science,* 1971-72.

(With R. E. Jenkins and E. A. Lachner.) "Fishes of the Central Appalachian Drainages: Their Distribution and Diapersal," in *The Distributional History of the Biota of the Southern Appalachians Pt. III. Vertebrates.* Blacksburg, Va.: Va. Polytechnic Institute, April, 1972. Pp. 43-117.

"Outside and In," in *Sport Fishing U.S.A.* Washington, D. C.: U. S. Department of Interior, September, 1971. Pp. 11-21.

"Biology of *Microgobius Thalassinus* (Pisces: Godiidae); a Sponge-inhabiting Goby of Chesapeake Bay, with Range Extensions of Two Goby Associates," *Chesapeake Science,* 12, No. 3 (September 1971), 156-66.

(With R. Marquez.) "A Lepomia in the Striped Mojarra, *Diapterus plumieri* (Pisces: Gerridae) from Mexico," *Journal of Elisha Mitchell Scientific Society,* 87, No. 3 (June 1972), 87-90.

"World literature to Fish Hybrids, with an Analysis by Family, Species, and Hybrid," *Gulf Coast Research Laboratory Museum Publications,* 3 (July 1972), 328.

(With A. B. Powell.) "Anomalies of the Genus *Paralichthys* (Pisces, Bothidae), including an Unusual Double-tailed Northern Flounder, *Paralichthys lethostigma,*" *Journal of Elisha Mitchell Scientific Society,* 88 No. 3 (October 1972), 155-161.

Review of T. H. Livaweaver and R. H. Backus, *The Natural History of Sharks* (New York: J. P. Lippencott Co., 1971), in *Copeia,* 1 (March 1971), 190.

Review of Marie P. Fish and W. H. Mowbray, *Sounds of Western North Atlantic Fishes* (Baltimore, Maryland: John Hopkins Press, 1971), in *Copeia,* 1 (March 1971), 190.

Review of J. P. McPhail and C. C. Lindsay, *Freshwater Fishes of Northwest Canada and Alaska* (Ottawa: Fisheries Research Board of Canada, 1971), in *Copeia,* 2 (May 1971), 380.

Review of S. Raymond, *Kamloops, An Anglers Study of the Kamloops Trout* (New York: Winchester Press) in *Copeia,* 3 (September 1972), 608.

AUSTIN BEATTY WILLIAMS

(With H. J. Porter.) "A Ten-year Study of Meroplanktion in North Carolina Estuaries: Occurrence of Postmetamor-

phal Bivalves," *Chesapeake Science,* 12, No. 1 (March 1971), 26-32.

"A Ten-year Study of Meroplankton in North Carolina Estuaries: Annual Occurrence of Some Brachyuran Developmental Stages," *Chesapeake Science* 12, No. 2 (June 1971), 53-61.

"A Ten-Year Study of Meroplankton in North Carolina Estuaries: Juvenile and Adult *Ogyrides* (Caridea: Ogyrididae)," *Chesapeake Science* 13, No. 2 (June 1972) 145-48.

(With K. H. Bynum.) "A Ten-year Study of Meroplankton in North Carolina Estuaries: Amphipods," *Chesapeake Science* 13, No. 3 (September 1972) 175-192.

"A Ten-year Study of Meroplankton in North Carolina Estuaries: Mysid Shrimps," *Chesapeake Science* 13, No. 4 (December 1972) 254-62.

(With William S. Brown.) "Notes on Structure and Parasitism of *Munida iris* (A. Milne Edwards) (Decapoda, Galatheidae) from North Carolina, U.S.A.," *Crustaceana,* 22, Pt. 3 (1972) 303-8.

Dissertations and Theses

The following doctoral dissertations were completed under the direction of the Institute:

Charles Ronald Dillon

A Comparative Study of the Primary Productivity of Estuarine Phytoplankton and Macrobenthic Plants. (1971, under the direction of William J. Woods.)

William Leonard Kruczynski

The Relationship of the Pea Crab, *Pinnotheres maculatus* (Say) with the Scallops, *Argopecten irradians concentricus* (Say) and *Argopecten gibbus* (Linne). (1971, under the direction of Austin Beatty Williams.)

The following master's thesis was completed under the direction of the Institute:

Nikki Meith Avcin

Sublethal Effects of DDT on the Behavioral Responses of Barnacles to Chemical and Tactile Stimuli. (1972, under the direction of Alphonse F. Chestnut.)

INSTITUTE OF GOVERNMENT

WILLIAM AUBREY CAMPBELL

Editor, *North Carolina Guidebook for Registers of Deeds.* 3rd edition. Chapel Hill: Institute of Government, 1972. Pp. viii, 149.

Property Tax Lien Foreclosure Forms; a Guide for Attorneys Concerned with Bringing and Defending Foreclosure Actions for the Collection of County and Municipal Property Taxes. Chapel Hill: Institute of Government, 1972. Pp. v, 130.

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STEVENS HALL CLARKE

Burglary and Larcency in Charlotte-Mecklenburg: a Description Based on Police Data. Chapel Hill: Institute of Government, October 1972. Pp. 47.

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JOHN MICHAEL CROWELL

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JOSEPH STEVENS FERRELL

"Civil Liability of North Carolina Cities and Towns for Personal Injury and Property Damage Arising from the Construction, Maintenance, and Repair of Public Streets," *Wake Forest Law Review,* 7 (March 1971), 143-74.

PHILIP PALMER GREEN, JR.

(With David M. Lawrence, Warren J. Wicker, and Randall Scott.) *How Govern Soul City? Report of Organizational Studies for Region K, New Community Program NCP-142.* Chapel Hill: Institute of Government, September 1971. Pp. iii, 213.

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"Land Use Controls: Part 1, Zoning," in *Institute on Dealing With and Representing Local Governments.* Raleigh: North Carolina Bar Association, 1971. Pp. iii, 1-17.

"The Legal and Governmental Framework of Planning," *Journal of Soil and Water Conservation,* 28 (Jan.-Feb. 1973), 14-18.

GLORIA ANN GRIZZLE

(With Jonnie H. McLeod.) *Alcohol and Other Drug Usage Among Junior and Senior High School Students in Charlotte-Mecklenburg.* Chapel Hill: Institute of Government, 1972. Pp. 71.

Causes and Effects of Drug Abuse. Chapel Hill: Institute of Government, October 1971. Pp. iii, 42.

A Comprehensive Program for the Prevention and Treatment of Drug Abuse in Charlotte-Mecklenburg. Chapel Hill: Institute of Government, January 1972. Pp. 47.

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DOROTHY JANE KIESTER

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BEN FOHL LOEB, JR.

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JOHN LASSITER SANDERS

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ROBERT EDWIN STIPE

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WARREN JAKE WICKER

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INSTITUTE OF NUTRITION

Director: HOWARD A. SCHNEIDER

HOWARD A. SCHNEIDER

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INSTITUTE OF OUTDOOR DRAMA

Director: MARK REESE SUMNER

The Institute of Outdoor Drama, established by the University in January, 1963, and sponsored by the Department of Dramatic Art, is devoted to research and training in all phases of outdoor drama organization, writing, design, management, and performance. Conferences and seminars for playwrights, managers, architects, directors, choreographers, designers, and performers, as well as for interested communities and government agencies, are conducted on campus. Research information is made available through publication of conference notes and special projects and through the advisory service of the Institute.

This advisory service utilizes the assistance of the members of the Dramatic Art Department faculty and staff representatives of ten of the nation's leading outdoor historical dramas.

Current areas of research include organization, management, promotion, playwriting techniques, performance techniques, lighting control, sound control, audience response and community resources development.

MARK REESE SUMNER

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INSTITUTE FOR RESEARCH IN SOCIAL SCIENCE

Director: JAMES WARREN PROTHRO

The Institute for Research in Social Science, founded in 1924 by Howard W. Odum, was established to facilitate behavioral science research at The University of North Carolina at Chapel Hill. Through the years the Institute has been a center for initiating, catalyzing, developing, and financing research in the social sciences.

The primary activities through which the Institute for Research in Social Science attempts to realize its basic purpose are: (1) facilitation of research, both funded and unfunded, of faculty members; (2) development and execution of new research programs; (3) fostering of interdisciplinary communication; and (4) provision of training for faculty and students, through both informal consultation on all stages of the research process and formal programs in the use of its computational facilities.

The Institute is composed of a Research and Administrative Staff, an Administrative Board, and a research faculty.

The Research and Administrative Staff is composed of the Director, Associate Director, Assistant Director, Director of the Social Science Statistical Laboratory, Director of the Social Science Data Library, Coordinator of Educational Services, Editorial Assistant, computer programmers, data processors, and secretaries. In addition, graduate assistants with methodological and computer training are assigned to the Statistical Laboratory and Data Library.

The Administrative Board is composed of four *ex officio* members (the Chancellor, the Provost, the Dean of the Graduate School, and the Director of the Institute) and eight other members appointed by the Chancellor for four-year terms.

The senior research faculty of the Institute consists of professors holding appointments in various departments, schools, or research centers of the University. During 1971 and 1972 these departments had Institute members: Anthropology, Business Administration, Carolina Population Center, Center for Alcohol Studies, Center for Urban and Regional Studies, City and Regional Planning, Economics, Education, Geography, History, Institute of Government, Journalism, Library Science, Medicine, Political Science, Psychology, Public Health, Religion, Social Work and Sociology.

Membership in the Institute is open to any UNC faculty member who is performing social science research, whether funded or not. Appointments to Institute membership are made by the Administrative Board on the basis of an application by the prospective member. Applications are accompanied by a statement from the prospective member's departmental chairman, dean, or director approving the application and granting the member a reduced teaching load to facilitate the research. Appointments are made for a period of one year. Members are elected for the coming academic year at the Board's Spring meeting.

Staff of the Institute's Social Science Statistical Laboratory provide consultation on methodology and strategy of analysis. Staff members are available to assist in processing members' data through available statistical programs or to write new programs, and to provide data cleaning, data listing, data reproduction and data storage services. The staff also gives training in the use of the laboratory equipment: desk calculators, unit record equipment, key punches, interatcive computer terminals, and a high-speed remote batch processing terminal linked to the IBM 360/75 at the UNC Computation Center and to the IBM 370/165 computer at the Triangle Universities Computation Center. The Coordinator of Educational Services coordinates assistance to undergraduate and graduate students in using the Institute's facilities and is available for teaching laboratory or class sessions on data analysis; he also gives non-credit short courses in the use of "canned" statistical analysis packages.

The Institute's Social Science Data Library maintains a large collection of data, with emphasis on computer-readable data. Through memberships in various national organizations, the Data Library makes it possible for the UNC social scientist to use data collected by the federal government, by research-

ers at other universities, or by the various national polling organizations. Through the Inter-University Consortium for Political Research, the Data Library has obtained a number of critically important data sets, such as the Survey Research Center national election studies. The Roper Center provides data from polling organizations throughout the world, such as the Roper organization and the various Gallup Polls located in Western countries. The Harris Polls are available through a special arrangement with Louis Harris and Associates, Inc., for which the Data Library is the national depository. A membership in the START-1 program of the National Data Use and Access Laboratories provides access to current and some past census data, as well as a major library of programs for using these data. In addition to these computer-readable data sets, the Data Library maintains the Human Relations Area Files, a catalogued set of documents pertaining (primarily) to pre-literate cultures.

Staff of the Social Science Data Library assist researchers in locating data sets, obtaining full documentation for these data sets, and in solving problems during analysis of the data.

Other services of the Institute include: research design, locating appropriate funding sources, assistance in drafting proposals, review of proposals, administration of grants, secretarial and clerical assistance, editorial assistance, support for graduate students, and publication of research monographs.

Senior members of the Institute for Research in Social Science are listed below; a record of their research and publishing activities will be found under appropriate departmental listings. See also Institute for Research in Social Science Monographs and Working Papers and *Research Previews.*

The senior members of the Institute for 1971-72 and 1972-73 were: James E. Allen, Public Health; Joseph F. Aponte, Medicine; Edward E. Azar, Political Science; Enrique A. Baloyra, Political Science; Karl E. Bauman, Public Health; Willard K. Bentz, Medicine; Thad L. Beyle, Political Science; Stephen S. Birdsall, Geography; Jay S. Birnbrauer, Psychology; Michael E. Bishop, Journalism; Merle Black, Political Science; Thomas A. Bowers, Journalism; John C. Brantley, Education; David J. Brower, Center for Urban and Regional Studies; Robert T. Brown, Psychology; Clyde E. Browning, Geography; Raymond J. Burby, Center for Urban and Regional Studies; M. Elaine Burgess, Sociology; James C. Car-

penter, Psychology; Ray L. Carpenter, Library Science; F. Stuart Chapin, Jr., Planning; Brian Coates, Psychology; Betty E. Cogswell, Public Health; Morris Cohen, Social Work; Richard R. Cole, Journalism; Leonard S. Cottrell, Jr., Sociology; Elizabeth J. Coulter, Public Health; M. Richard Cramer, Sociology; Julia G. Crane, Anthropology; Robert T. Daland, Political Science; Robert E. Daniels, Anthropology; Martin Dillon, Library Science; David A. Eckerman, Psychology; Bruce K. Eckland, Sociology; Glen H. Elder, Jr., Sociology; P. J. Epling, Public Health; Terence M. S. Evens, Anthropology; John A. Ewing, Medicine; C. T. Faneuff, Population Center; Peter G. Filene, History; Arthur E. Fink, Social Work; John W. Florin, Geography; John T. Gentry, Public Health; Federico G. Gil, Political Science; Douglas R. Gill, Institute of Government; David R. Godschalk, Planning; Paula Goldsmid, Social Work; Bradford H. Gray, Sociology; Felix J. Gruber, Public Health; John Gulick, Anthropology; R. F. Hafer, Anthropology; M.-Francoise Hall, Population Center; Thomas L. Hall, Population Center; William P. Hawkinson, Education; Amos H. Hawley, Sociology; Arthur J. Hawley, Geography; Robert S. Headen, Business Administration; David R. Heise, Sociology; George C. Hemmens, Planning; Carl Henley, Social Work; Joseph T. Howell, III, Center for Urban and Regional Studies; Edward S. Howle, Economics; Maynard M. Hufschmidt, Planning; G. David Hughes, Business Administration; George R. Iden, Economics; Chester A. Insko, Psychology; Alvin L. Jacobson, Sociology; Sagar C. Jain, Public Health; Thomas H. Jerdee, Business Administration; Albert L. Johnson, Social Work; Edward J. Kaiser, Planning; Arnold D. Kaluzny, Public Health; William Keech, Political Science; Paul Kress, Political Science; Henry A. Landsberger, Sociology; Henry A. Latane, Business Administration; George T. Lathrop, Planning; Robert G. Lehnen, Political Science; Dorothea C. Leighton, Public Health; Gerhard E. Lenski, Sociology; C. Donald Liner, Institute of Government; Lewis Lipitz, Political Science; Gertrude London, Library Science; Roger W. Lotchin, History; Maxwell McCombs, Journalism; Frederick D. McEvoy, Anthropology; Donald L. Madison, Medicine; Emil E. Malizia, Planning; John F. Marshall, Anthropology; John D. Martz, Political Science; Robert R. Mayer, Planning; Francis T. Miller, Medicine; Barry M. Moriarty, Geography; Robert M. Moroney, Planning; Naomi M. Morris, Public

Health; James J. Mullen, Journalism; Francis X. Mulvihill, Center for Urban and Regional Studies; James L. Murphy, Economics; N. Krishnan Namboodiri, Sociology; Ethel M. Nash, Medicine; Louis J. Nidrof, Public Health; Robert W. Noyes, Public Health; Jeffrey Obler, Political Science; Ali A. Paydafar, Population Center; James Peacock, Anthropology; Maria Perez-Reyes, Medicine; Harry T. Phillips, Public Health; Steven Polgar, Anthropology; Raymond H. Pulley, History; George Rabinowitz, Political Science; Amnon Rapoport, Psychology; John Shelton Reed, Sociology; Robert J. Reichler, Medicine; Harriet L. Rheingold, Psychology; Richard J. Richardson, Political Science; John L. Robson, Center for Urban and Regional Studies; Steven Rosefielde, Economics; Benson Rosen, Business Administration; Beatrice A. Rouse, Center for Alcohol Studies; Robert A. Rupen, Political Science; Frederick A. Russ, Business Administration; Shirley Sanders, Medicine; Earl S. Schaefer, Public Health; Philip C. Schlechty, Education; Eric Schopler, Medicine; John Schopler, Psychology; Stephen R. Schroeder, Psychology; Andrew M. Scott, Political Science; Donald L. Shaw, Journalism; Eugene G. Shaw, Journalism; Kenneth D. Shearer, Jr., Library Science; Mindel C. Sheps, Public Health; Richard L. Simpson, Sociology; Jane B. Sprague, Public Health; Dirk J. Spruyt, Public Health; Thomas E. Steahr, Population Center; Jurg Steiner, Political Science; Alan J. Stern, Political Science; David G. Stillman, Population Center; Robert P. Strauss, Economics; Charles G. Stricklen, Jr., History; Vincent J. Tarascio, Economics; John Thibaut, Psychology; Anthony E. Thomas, Anthropology; Vaida D. Thompson, Psychology; George B. Tindall, History; Joseph S. Tulchin, History; Boone A. Turchi, Economics; H. A. Tyroler, Public Health; Ruel W. Tyson, Jr., Religion; J. Richard Udry, Public Health; Peter Uhlenberg, Sociology; James E. Veney, Public Health; Barbara H. Wasik, Education; Shirley F. Weiss, Planning; George S. Welsh, Psychology; James W. White, Political Science; Joel Williamson, History; Shirley H. Witt, Anthropology; Ann Witte, Economics; Stephen Worchel, Psychology; Deil S. Wright, Political Science; Marvin D. Wyne, Education; Robert B. Zehner, Center for Urban and Regional Studies.

Monographs and Working Papers

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the Analysis of Taxonomy (Working Papers in Methodology No. 6), 1972. Pp. 167.

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Richard J. Richardson, Oliver Williams, Thomas Denyer, Skip McGaughey, and Darlene Walker, *Perspectives on the Legal Justice System: Public Attitudes and Criminal Victimization,* 1972. Pp. 93.

INSTITUTE OF SPEECH AND HEARING SCIENCES

Director: ROBERT WILLIAM PETERS

ROBERT WILLIAM PETERS

(With Theodore D. Hanley.) "The Speech and Hearing Laboratory," in *Handbook of Speech Pathology and Audiology,* ed., Lee Edward Travis. New York: Appleton-Century-Crofts Educational Division, Meredith Corporation, 1971. Pp. 75-140.

Review of Joseph S. Perkell, *Physiology of Speech Production: Results and Implications of a Quantitative Cineradiographic Study* (Cambridge, Massachusetts and London, England: the M.I.T. Press, 1969 Research Monograph No. 53), in *Journal of Communication Disorders,* 3 (1971), 314-16.

THESES

The following masters' theses were completed under the direction of the department:

LAURA WALL BLACK

A Coarticulation Analysis of Selected Misarticulated Sounds. (1971, under the direction of ROBERT WILLIAM PETERS.)

ROSALYN MCKINNEY BRADLEY

Dysathria: Its Relation to Neurologically Based Speech Problems. (1971, under the direction of ROBERT WILLIAM PETERS.)

LUCY LOEWENHEIM COHEN

Response Behaviors of Infants of Various Ages to Simu-

lated Moving Sound Stimuli. (1971, under the direction of ROBERT WILLIAM PETERS.)

ANNA SUZETTE K. COUCH

The Effects of Maturation on Central Auditory Processing. (1972, under the direction of WILLIAM GRADY THOMAS.)

MARILYN MICHELLE DROETTBOOM

The Sequential Development of Syntax and its Clinical Application. (1971, under the direction of GEORGE DOUGLAS ALLEN.)

MARSHA LYNN LEIKEN

Study of Factors Related to Aphasic Comprehension. (1972, under the direction of ROBERT BRUCE MAHAFFEY.)

MARILYN RUTH LOFTIS

Natural Language for Hearing Impaired Children. (1972, under the direction of ROBERT WILLIAM PETERS.)

EMILY FOLGER SIMPSON

An Acoustical Analysis of Alaryngeal Speech. (1971, under the direction of ROBERT WILLIAM PETER.)

HELEN VIRGINIA STRAWN

The Frequency of Whole Word Misarticulations as a Funtion of the Method of Eliciting Speech. (1972, under the direction of DORIS PARKER BRADLEY.)

SHARON BISCHOFSHAUSEN THOMAS

A Comparative Study of the Development of Seven Verb Phrase Features in Hearing-Impaired and Normal-Hearing Preschool Children. (1972, under the direction of GEORGE DOUGLAS ALLEN.)

KAY ELLEN WHITNEY

A Psycho-Acoustic Comparison of a Standard Cushion-Phone Device and the Standard Device Placed within an Amplivox. (1972, under the direction of THOMAS JAMES WOOD.)

REBECCA RULE WOMBLE

Receptive Language in Normal and Retarded Children. (1972, under the direction of ROBERT WILLIAM PETERS.)

STEPHANIE STEIN ZERDEN

Videotapes of Speech Disorders for Teacher Training. (1972, under the direction of ROBERT BRUCE MAHAFFEY.)

CENTER FOR URBAN AND REGIONAL STUDIES

Director: JONATHAN BROOME HOWES

The Center for Urban and Regional Studies was established in 1957 as a program within the Institute for Research in Social Science, under the leadership of F. Stuart Chapin, Jr. From its inception, the main purpose of the Center has been to foster research on the processes of urbanization, both basic and applied. It has also encouraged the exchange of ideas among disciplines.

In 1970, the Center was reorganized as part of the Program in Urban Studies in the University of North Carolina. Coordinated through the Office of the Vice President for Research and Public Service Programs, funding from this Program provides for central office staffs in urban affairs units of North Carolina State University in Raleigh, the University of North Carolina at Charlotte and the University of North Carolina at Chapel Hill, and in the Institute for Government at Chapel Hill. As Part of this reorganization, the Center separated from the Institute for Research in Social Science, becoming a separate unit in the Division of Academic Affairs on the Chapel Hill Campus, with a full-time director who reports to the Provost. The purpose of this structure is to add to the Center's research activity the application of research findings to policy-problems connected with urbanization.

In October 1971, an Urban Studies Advisory Council was appointed to advise the various units of the program in Urban Studies on urban public service needs and research priorities. The Council is composed of forty prominent leaders from the public and private sectors, representing state and local governments, community groups, and the public at large concerned with urban problems in North Carolina.

Recent research interests include: moving behavior and residential choice, activity systems of urban residents, effects of water resources on land use, influence of urban planning and controls on environmental quality, new towns as viable mechanisms for implementing urban growth policy and dy-

namics of housing markets in smaller urban areas. As part of its mandate to apply knowledge to policy problems, the Center has initiated several projects with North Carolina state and local governments, including exploration of State wide policy alternatives regarding land use, large scale developments and housing. In Winston-Salem, a study of potential roles of higher education in the city and an evaluation of the planned Variations Program are being conducted.

Major sources of support for research activities in the Center include: the National Science Foundation, the Ford Foundation, the Environmental Protection Agency, the National Institute of Mental Health and the Public Health Service of the United States Department of Health, Education and Welfare, the Office of Water Resources Research of the United States Department of the Interior, the Water Resources Research Institute of the University of North Carolina, the Division of State Planning of the North Carolina Department of Administration and the Model City Department of the City of Winston-Salem.

The following members hold appointments in the Department of City and Regional Planning: David J. Brower, F. Stuart Chapin, Jr., Sidney Cohn, David R. Godschalk, Jonathan B. Howes, Maynard M. Hufschmidt, Edward J. Kaiser, George T. Lathrop, Francis H Parker, Michael A. Stegman, and Shirley F. Weiss.

RAYMOND JOSEPH BURBY, III

(With Shirley F. Weiss and Edward J. Kaiser.) Editor, *New Community Development: Planning Process, Implementation and Emerging Social Concerns.* Volume I. Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1971. Pp. vi, 527.

(With Shirley F. Weiss and Edward J. Kaiser.) Editor, *New Community Development: Planning Process, Implementation and Emerging Social Concerns.* Volume II. Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1971. Pp. vi, 264.

Household Decision Processes in the Purchase and Use of Reservoir Recreation Land. Raleigh: Water Resources Research Institute of the University of North Carolina, 1971. Pp. xxiii, 214.

(With Thomas G. Donnelly and Shirley F. Weiss.) *A Model for Simulating Residential Development in Reservoir Recrea-*

tion Areas. Raleigh: Water Resources Research Institute of the University of North Carolina, 1971. Pp. xvi, 137.

(With Thomas G. Donnelly and Shirley F. Weiss.) *Lake Norman Developmental Impact Study.* Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1972. Pp. iii, 121.

(With Thomas G. Donnelly and Shirley F. Weiss.) *Multipurpose Reservoirs and Urban Development.* Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1972. Pp. 52.

(With Shirley F. Weiss.) "Community Problems in Reservoir Recreation Areas," *Research Previews,* 18 (April 1971), 1-13.

"A Quantitative Analysis of Factors Influencing Residential Development of Rural Recreation Areas," *Journal of Leisure Research,* 3 (Spring 1971), 69-80.

(With Thomas G. Donnelly and Shirley F. Weiss.) "A Model for Simulating Residential Development in Rural Recreation Areas," *The Review of Regional Studies,* 3 (Fall 1972), 134-44.

(With Thomas G. Donnelly and Shirley F. Weiss.) "Vacation Home Location: A Model for Simulating the Residential Development of Rural Recreation Areas," *Regional Studies,* 6 (December 1972), 421-39.

FRANCIS STUART CHAPIN, JR.

(See entries under Department of City and Regional Planning.)

THOMAS GEORGE DONNELLY

(With Shirley F. Weiss and Raymond J. Burby, III.) *A Model for Simulating Residential Development in Reservoir Recreation Areas.* Raleigh: Water Resources Research Institute of the University of North Carolina, 1971. Pp. xvi, 137.

(With Raymond J. Burby, III and Shirley F. Weiss.) *Lake Norman Developmental Impact Study.* Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1971. Pp. iii, 121.

(With Raymond J. Burby, III and Shirley F. Weiss.) *Multipurpose Reservoirs and Urban Development.* Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1972. Pp. 52.

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LINDA S. FISCHER

The Use of Services in the Urban Scene: the Individual and the Medical Care System. Chapel Hill: Center for Urban and Regional Studies, University of North Carolina, 1971. Pp. ix, 120.

DAVID ROBINSON GODSCHALK

(See entries under Department of City and Regional Planning.)

EDWARD JOHN KAISER

(See entries under Department of City and Regional Planning.)

RONALD MCALLISTER

(With Theodore Droettboom, Jr., Edward J. Kaiser and Edgar W. Butler.) "Urban Violence and Residential Mobility," *Journal of the American Institute of Planners,* 37 (September 1971), 319-25.

(With Edward J. Kaiser and Edgar W. Butler.) "Residential Modility of Blacks and Whites: A National Longitudinal Survey," *American Journal of Sociology,* 77 (November 1971), 445-56.

SHIRLEY FRIEDLANDER WEISS

(See entries under Department of City and Regional Planning.)

ROBERT BOLLES ZEHNER

"Neighborhood and Community Satisfaction: A Report on New Towns and Less Planned Suburbs," in *Environment and the Social Sciences: Perspectives and Applications,* eds., Joachim F. Wohlwill and Daniel H. Carson. Washington, D.C.: American Psychological Association, 1972. Pp. 169-83.

(With Robert W. Mavans.) "Some Observed Patterns of Residential Density and Social Interaction," in *Housing: New*

Trends and Concepts, ed., Kenneth L. Bernhardt. Ann Arbor: Institute of Science and Technology, University of Michigan, 1972. Pp. 62-69.

"Neighborhood and Community Satisfaction in New Towns and Less Planned Suburbs," *Journal of the American Institute of Planners,* 37 (November 1971), 379-85.

THE L. L. THURSTONE PSYCHOMETRIC LABORATORY

Acting Director: EDWARD S. JOHNSON.

The purpose of the L. L. Thurstone Psychometric Laboratory is to perform research concerning quantitative approaches to problems of psychology and to train graduate students to become future colleagues in such research.

The following publications and papers were completed in the Psychometric Laboratory of the Department of Psychology.

MARK I. APPELBAUM

(With V. D. Thompson and J. Holmes.) "Introducing Population into a Psychology Curriculum: A Challenge for Psychologists," in J. Fawcett *Psychological Issues in Population,* ed., J. Fawcett. New York: Basic Books, 1972. Pp. 471-509.

(With J. S. Wiggins and L. R. Goldberg.) "MMPI Content Scales: Interpretative Names and Correlations with Other Scales," *Journal of Consulting and Clinical Psychology,* 37 (1971), 403ff.

ANTHONY J. CONGER

"A revised definition for suppressor variables: A guide to their identification and interpretation," Chapel Hill, N. C.: *Psychometric Laboratory Report* No. 96 (July 1971), 1-18.

"Estimating profile reliability and maximally reliable composites," *Psychometric Laboratory Report No. 106* (February 1972), 1-32.

(With Judith C. Conger.) "Maximally reliable profile dimensions for the WISC," *Psychometric Laboratory Report No. 109* (August 1972), 1-22.

ELLIOT M. CRAMER

(With E. A. Youngs.) "Some results relevant to choice of

sum and sum-of-product algorithms," *Technometrics,* 13 (1971), 657-65.

"Review of Multivariate model building by John Sonquist," *Psychometrika,* 36 (1971), 440-42.

"Significance tests and tests of models in multiple regression," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 93* (April 1971), 15.

"A generalization of vector correlation and its relation to canonical correlation," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 99* (September 1971), 6.

"Letter: Standard error of forecast in multiple regression," *The American Statistician* (June 1972), 63-64.

"Letter: Missing values in experimental design models," *The American Statistician* (October 1972), 58.

"Significance tests and tests of models in multiple regression," *The American Statistician* (October 1972), 26-30.

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EDWARD S. JOHNSON

"The objective identification of strategy on a reception concept learning task," *Journal of Experimental Psychology Monograph,* 90 (September 1971), 167-96.

(With R. Baker.) "Some Effects of Computerizing an Experiment in Human Problem Solving," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 105* (February 1972), 35.

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(With J. W. Tukey, R. P. Abelson, W. E. Coffman, J. P. Gilbert, and F. Mosteller.) *National Assessment of Educa-*

tional Process, Report 7, 1969-70 Science: Group and Balanced Group Results for Color, Parental Education, and Size and Type of Community, and Balanced Group Results for Region of the Country and Sex. Denver: Education Commission of the States, December 1971. Pp. 8, 110-85.

"The nature of measurement," in *Educational Measurement,* ed., R. L. Thorndike. 1971. Pp. 335-55.

AMNON RAPOPORT

(With S. Fillenbaum.) *Structures in the Subjective Lexicon.* New York: Academic Press, Inc., 1971. Pp. vii, 266.

(With G. J. Burkheimer.) "Models for Detection of Change," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 95* (June 1971), 1-53.

(With J. P. Kahan.) "Decisions of Timing in Pure Conflict I: The Noisy Duel With Equal Accuracies," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 102* (December 1971), 1-36.

(With J. P. Kahan and W. E. Stein.) "Decisions of Timing in Pure Conflict III: The Silent Duel with Equal Accuracies," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 110* (October 1972), 1-56.

(With W. E. Stein.) "Minimum Risk Decision Policies in Multistage Betting Games," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 111* (October 1972), 1-36.

(With J. P. Kahan.) "Test of the Bargaining Set and Kernel Models in Three-Person Game," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 112* (December 1972), 1-40.

(With A. D. Horowitz.) "Test of the Kernel and Two Bargaining Set Models in Four- and Five-Person Games," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 113* (December 1972), 1-37.

Review of Anatol Rapoport, *N-Person Game Theory: Concepts and Applications* (Ann Arbor: University of Michigan Press, 1970) in *Contemporary Psychology,* XVI (February 1971), 49-51.

(With B. J. Calder.) "Are Inventory Decisions Optimal?" in *Beiträge sur Experimentallen Wirtschaftsforschung, Band III* (Contributions to Experimental Economics, Vol. 3), ed. H. Sauermann. Tubingen, Germany: J. C. Mohr (Paul Siebeck), 1972. Pp. 418-58.

(With T. S. Wallsten.) "Individual Decision Behavior,"

in *Annual Review of Psychology, Vol. 23,* eds., P. H. Mussen and M. R. Rosenzweig. Palo Alto, California: Annual Reviews, Inc., 1972. Pp. 131-76.

(With S. Fillenbaum.) "An Experimental Study of Semantic Structures," in *Multidimensional Scaling: Theory and Applications in the Behavioral Sciences, Vol. II,* eds., A. K. Romney, R. N. Shepard, and S. B. Nerlove. New York: Seminar Press, Inc., 1972. Pp. 93-131.

(With M. Kubovy and A. Tversky.) "Deterministic vs. Probabilistic Strategies in Detection," *Perception and Psychophysics,* 9 (May 1971), 427-29.

(With G. J. Burkheimer.) "Models for Deferred Decision Making," *Journal of Mathematical Psychology,* 8 (November 1971), 508-38.

(With R. W. Lissitz, and H. A. McAllister.) "Search Behavior With and Without Optimal Stopping," *Organizational Behavior and Human Performance,* 7 (January 1972), 1-17.

THOMAS S. WALLSTEN

(With Ammon Rapoport.) "Individual Decision Behavior," in *Annual Review of Psychology,* Vol. 23, eds., P. H. Mussen and M. R. Rosenzweig. Palo Alto, California: Annual Reviews, Inc., 1972. Pp. 131-76.

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"A Conjoint-Measurement Framework for the Study of Probabilistic Information Processing," *Psychological Review,* 79 (May 1972), 245-60.

"Subjectively expected utility theory and subject's probability estimates: use of measurement free techniques," *Journal of Experimental Psychology,* 88 (1971), 31-40.

"Probabilistic information processing, Bayes' rule and conjoint measurement," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 98* (August 1971), 29.

FORREST W. YOUNG

"A model for polynomial conjoint analysis algorithms," in *Multidimensional Scaling* (Vol. 1), eds., R. N. Shepard, A. K. Romney, and S. B. Nerlove. New York: Seminar Press, 1972. Pp. 69-104.

(With R. Dobson.) "TORSCA 10: A small machine (IBM 1130) FORTRAN IV program for nonmetric multidimensional scaling," *Behavioral Science,* 17 (May 1972), 325.

(With N. Cliff.) "Interactive scaling with individual subjects," *Psychometrika,* 37 (December 1972), 385-416.

(With L. Jones.) "The structure of a social environment: A longitudinal individual differences scaling of an intact group," *Journal of Personality and Social Psychology,* 24 (January 1972), 108-21.

"POLYCON users manual. A FORTRAN-IV program for polynomial conjoint analysis," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 104* (February 1972), 190.

"Polynomial Conjoint Analysis: Some second-order partial derivatives," Chapel Hill, N. C.: *Psychometric Laboratory Report No. 108* (July 1972), 18.

Theses

The following masters' theses were completed under the direction of Psychometric Laboratory faculty:

Robert Baker

A Comparison of Human and Computer Controlled Experiments in Psychological Research. (1972, under the direction of Edward S. Johnson.)

Sandra G. Funk

Valve Power and Positional Power in N-Person Games. (1972, under the direction of Amnon Rapoport.)

John Hawley

A Study of Empirical Test Size and Power for Several Methods in the Analysis of Repeated Measurements Data. (1972, under the direction of Mark I. Applebaum.)

Abraham D. Horowitz

The Competitive Bargaining Set: Development, a Test, and Comparison with the Bargaining Set and Kernel in N-Person Games. (1971, under the direction of Amnon Rapoport.)

Charles R. Sherman

Non-metric multi-dimensional scaling: the role of the Minkowski metric. (1971, under the direction of Forrest W. Young.)

Susan Whitford Sherman

Perception of Rectangles: Scaling of cognitive space. (1971, under the direction of Forrest W. Young.)

RANDY ELLIS SHONFELD

Nonmetric multidimentional scaling and dog breeds. (1971, under the direction of FORREST W. YOUNG.)

SOCIAL RESEARCH SECTION

Director: HARVEY L. SMITH

The Social Research Section, Division of Health Affairs, has a continuing study program of health care needs and resources in North Carolina. Its emphases include health manpower (distribution and training resources), illness and mortality statistics, health facilities (distribution, resources and usage patterns), and population-demographic and socio-economic analyses. Through consultation and publication, study findings are communicated to a wide array of educational institutions, state agencies, planning groups, health care programs, professional societies and special committees throughout the state.

SHANNON P. HALLMAN

(With Maxine S. Stern.) *Project Review of North Carolina Regional Medical Program: An Evaluation Report.* University of North Carolina at Chapel Hill: Division of Health Affairs. August 1971. Pp. 147.

SARAH KAUFMAN

An Analysis of Nursing Home Services and Resources in North Carolina. University of North Carolina at Chapel Hill: Division of Health Affairs. August 1971. Pp. 89.

SAUNDRA MERCIER

A Survey of Vocational Rehabilitation Services for the Categorical Diseases in North Carolina. University of North Carolina at Chapel Hill: Division of Health Affairs. August 1971. Pp. 24.

JOSEF PERRY

(With Maxine S. Stern, Regina Gunsett, Sharon Guisinger, and the assistance of Shannon P. Hallman, Lucy Ann Smith, Maureen R. Avis and Linda L. Currie.) *A Decade of Change in North Carolina, 1960-1970: Selected Measures Relevant to*

Mental Health. University of North Carolina at Chapel Hill: Division of Health Affairs. July 1972. Pp. 461.

(With F. Neil Smith and the assistance of Shannon P. Hallman and Linda L. Currie.) *Demographic and Socio-economic Data for Selected Areas of Orange and Chatham Counties.* University of North Carolina at Chapel Hill: Division of Health Affairs. September 1972. Pp. 57.

Survey of U. N. C. Medical School Graduates: Classes of 1954-65. University of North Carolina At Chapel Hill: Division of Health Affairs. August 1971. Pp. 34.

The 1970 Census: First-Count Data and Maps. University of North Carolina at Chapel Hill: Division of Health Affairs. August 1971. Pp. 34.

MAXINE S. STERN

(With Josef Perry, Regina Gunsett, Sharon Guisinger, and the assistance of Shannon P. Hallman, Lucy Ann Smith, Maureen R. Avis and Linda L. Currie.) *A Decade of Change in North Carolina, 1960-1970: Selected Measures Relevant to Mental Health.* University of North Carolina at Chapel Hill: Division of Health Affairs. July 1972. Pp. 461.

(With Shannon P. Hallman.) *Project Review of North Carolina Regional Medical Program: An Evaluation Report.* University of North Carolina at Chapel Hill: Division of Health Affairs. August 1971. Pp. 147.

JANE WEBB

Patient Characteristics and Treatment in North Carolina Hospitals in 1968: An Analysis of PAS Data for North Carolina Hospitals. University of North Carolina at Chapel Hill: Division of Health Affairs. August 1971. Pp. 124.

(With the assistance of Shannon P. Hallman and Linda L. Currie.) *Relationship of Disease to Age, Race, and Sex Characteristics in Selected North Carolina Hospitals.* University of North Carolina at Chapel Hill: Division of Health Affairs. November 1972. Pp. 39.

(With the assistance of Shannon P. Hallman and Linda L. Currie.) *The Relationship Between Patient Social Characteristics and Hospital Care Received1 An Analysis of Appendectomy Patients in North Carolina.* University of North Carolina at Chapel Hill: Division of Health Affairs. November 1972. Pp. 36.

JACQUELIN WERNER-SCARBROUGH

(With F. Neil Smith.) *Education for Family Practice: Views of Frontline Physicians.* University of North Carolina at Chapel Hill: Division of Health Affairs. May 1972. Pp. 305.

RESEARCH LABORATORIES OF ANTHROPOLOGY

Director: JOFFRE LANNING COE

Assistant Director: DONALD LESLIE BROCKINGTON

The Research Laboratories of Anthropology were established in 1939, for the purpose of conducting basic anthropological studies in the fields of archaeology, ethnography, physical anthropology, and other related subjects. Its office and laboratories are situated on the first and second floor of Alumni Building.

REGIONAL DENTAL RESEARCH CENTER

Acting Director: GARY R. SMILEY

The Regional Dental Research Center was identified in 1967 as one of the five Regional Dental Research Institutes or Centers established throughout the nation. It is supported by a grant from the National Institute of Dental Research of the National Institutes of Health. Members of the dental profession throughout North Carolina helped support construction of the Dental Research Center which joins the School of Dentistry. It is administratively a part of the School of Dentistry and members of its staff have appointments in appropriate departments in the School and throughout the University. The Center's new approach to oral health research enlists the collaboration of all appropriate elements of the University, with a major objective to broaden and strengthen the scientific base which underlies the national capability to improve oral health. It builds on and extends existing institutional research strengths, provides for multidisciplinary efforts and facilitates the collaboration of a wide range of scientists in the study of oral health problems of common interests.

Research conducted in the Regional Dental Research Cen-

ter Program concentrates on a greater understanding of aspects of growth and development of the craniofacial region. Teams of investigators were formed to work on the following areas: Neural Mechanisms-seeks to develop effective means for the control of oral and facial pain through studies of the trigeminal sensory pathway. Mineralization Mechanisms —the role of mineralization in tooth and bone formation. Growth Mechanisms—studies on the etiology and developmental hard and soft tissue deformities of cleft palate. Vocalization Mechanisms—the role of articulatory structure in the speech mechanism. Immunological Mechanisms—applied research on periodontal disease and aspects of tumor immunity. Hemostatic Mechanisms—studies on tissue transplantation and wound healing problems. Biomaterials Research—investigations on tissue capability of various polymers and the acceptability of other dental restorative materials.

For publications of the following faculty members of the Regional Dental Research Center Program see entries under the School of Dentistry.

Neural Mechanisms: Drs. John M. Gregg, Jacob S. Hanker, Roy Peach and Barry L. Whitsel.

Mechanisms of Mineralization: Drs. Miles A. Crenshaw, E. Preston Hicks, Gerald L. Mechanic, Warren K. Ramp and Svein U. Toverud.

Growth Mechanisms: Drs. James C. Coffey, Jr., Ralph A. Latham and Gary R. Smiley.

Vocalization Mechanisms: Drs. George D. Allen and Donald W. Warren.

Immunological Mechanisms: Drs. Myron S. Silverman, Ralph Snyderman, and Marvin L. Tyan.

Biomaterials Research: Drs. Karl F. Leinfelder, Duane F. Taylor and Derek T. Turner.

Hemostasis Research: Drs. Henry S. Kingdon, Roger L. Lundblad, John T. Penniston and William P. Webster.

PART III

RESEARCH SOCIETIES

THE ELISHA MITCHELL SCIENTIFIC SOCIETY

Officers for the year 1971-1972: C. Hugh Holman, *President:* George B. Daniel, Jr., *Vice-President;* David Sider, *Secretary-Treasurer.*

Officers for the year 1972-1973: George B. Daniel, Jr., *President;* Philip J. Epling, *Vice-President;* William C. Dickison, *Secretary-Treasurer.*

THE PHILOLOGICAL CLUB

Officers for the year 1971-1972; C. Hugh Holman, *President:* George B. Daniel, Jr., *Vice-President;* David Sider, *Secretary;* Jack Sasson, *Treasurer.*

Officers for the year 1972-1973: George B. Daniel, Jr., *President;* Berthe M. Marti, *Vice-President;* David Sider, *Secretary;* Connie C. Eble, *Treasurer.*

February 9, 1971

Douglas Young: *Was Homer an Illiterate Improviser?*

March 9, 1971

Thomas A. Stumpf: *The Microscopic Eye.*

April 7, 1971

Michael R. McVaugh: *The Introduction of Arabic Science and Medicine at Montpelier.*

October 5, 1971

C. Carroll Hollis: *Whitman Speaks Those Passwords Primeval.*

November 2, 1971

Brooks Otis: *How the Christians Discovered Time.*

December 7, 1971

Richard H. Fogle: *Hawthorne and the English Romantic Poets.*

February 1, 1972

Alva V. Ebersole: *Lope De Vega and El Castigo Sin Venganza.*

March 7, 1972

Blyden Jackson: *The Green Green Pastures.*

May 2, 1972

Stirling Haig: *Three Romantic Themes in Stendhal: Napoleon, The Outlaw, The Prison.*

October 3 ,1972

C. Hugh Holman: *Thomas Wolfe and the Problem of Point of View.*

November 7, 1972

Juan Bautista Avalle-Arce: *Don Quixote or Life as Work of Art.*

December 5, 1972

Siegfried Mews: *From Karl May to Karl Marx: Carl Zuckmayers' view of America.*

THE SOCIETY OF THE SIGMA XI UNIVERSITY OF NORTH CAROLINA CHAPTER

Officers for the year 1970-1971: Paul L. Munson, *President;* Fred B. Wright, *Vice-President;* Robert A. Mah, *Secretary;* George K. Summer, *Treasurer;* Claude Piantadosi, *Member-at-Large.*

Officers for the year 1971-1972: Wayne A. Bowers, *President;* Elizabeth A. McMahan, *Vice-President;* Helen L. White, *Secretary;* Ronald C. Reitz, *Treasurer;* W. Grant Dahlstrom, *Member-at-Large.*

May 18, 1971

Dr. Y. M. Pocker, Department of Chemistry, University of Washington, Seattle, Washington: *"The Chemistry of Respiration."*

November 18, 1971

Dr. Owen Gingerich, Harvard University and The Smithsonian Institute: *"Johannes Kepler, Physicist or Metaphysicist?"*

April 25, 1972

Dr. Wayne Bowers, Professor of Physics, Department of Physics, University of North Carolina at Chapel Hill: *"The Motion of Atoms in Solids."*

October 24, 1972

Dr. William R. Muehlberger, Professor of Geology, Department of Geology, University of Texas; Principal Investigator, Apollo Field Geology Investigations, U. S. Geological Survey: *"Geological Results From The Apollo Program."*

PART IV

RESEARCH PUBLICATIONS

ADULT EDUCATION: A JOURNAL OF RESEARCH AND THEORY

Editor: DWIGHT C. RHYNE

Assistant Editor: CLARK LUIKART

Editorial Assistant: LYNN HARTWIG

Consulting Editors: Robert Carlson, University of Saskatchewan; Harlan Copeland, Syracuse University; Francis Fay, University of North Carolina; William S. Griffith, University of Chicago; Norfleet Hardy, University of North Carolina; Roy Ingham, Florida State University; Alan B. Knox, University of Illinois; Jack London, University of California at Berkeley; Huey Long, University of Georgia; Harry Miller, Hunter College; John Ohliger, Ohio State University; C. W. Portal-Foster, McMaster University; Emily Quinn, University of Georgia; Alan Tough, Ontario Institute for Studies in Education; W. Keith Warner, Brigham Young University; Eugene Watson, University of North Carolina; James B. Whipple, New Directions for Education; Jane Zahn, San Francisco State College.

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ARTICLES

Motivational Orientations of Adult Education Participants: A Factor Analytic Exploration of Houle's Typology. *Roger Boshier.*

Differences in Educational Level and Subject Matter Difficulty in the Use of Compressed Speech with Adult Military Students. *Meredith W. Watts, Jr.*

Information Sources, Dogmatism, and Judgmental Modifications. *Huey B. Long.*

The Relationship Between Dogmatism Scores and Performance Ratings Among Adult Educators. *C. Dennis Funk* and *G. L. Carter, Jr.*

BOOK REVIEWS

Thomas: Smith, Aker, and Kidd, eds., *Handbook of Adult Education.*
Jahns: Rogers, *Freedom to Learn.*

Volume XXI, Number 3—Spring 1971, pp. 133-220.

ARTICLES

Toward a Theory of Practice. *Jack Mezirow.*
Analysis of the Performance of Adult Women in Missouri on Three General Examinations of the College Level Examination Program. *Margaret C. Fagin.*
A Comparison of Two Training Formats for Persons with Varying Interpersonal Needs. *Marian Smallegan.*
A Content Analysis of *Adult Education. Gary Dickinson* and *Dale Rusnell.*
A Remedial Program for Undergraduate Evening Students. *R. Daniel Di Salvi.*

BOOK REVIEWS

Hardy: Kelly, *A History of Adult Education in Great Britain.*
Draper: Levin and Slavet, *Continuing Education.*
Holden: Thomas and Griffith and Others, *Adult and Continuing Education, Special Study Number 5 of the National Education Finance Project.*

ADULT EDUCATION REPORTS

Volume XXI, Number 4—Summer 1971, pp. 221-292.

ARTICLES

Predicting Drop-Outs in Adult Education Courses. *Geoffrey E. Sainty.*
Adult Academic Achievement in Relation to Formal Education and Age. *Amiel T. Sharon.*
Laboratory Process and Case Study in Adult Political Development. *Ira J. Winn.*
The Effectiveness of Taped Reading Instruction in Increasing the Reading Rate and Comprehension of Undereducated Adults. *Antusa S. Bryant, Benjamin F. Bryant, Dagny Christiansen,* and *Lucille Fischer.*

BOOK REVIEWS

Blackburn: Bennis, Benne, and Chin, *The Planning of Change.*
Kulich: Council of Europe Studies on Adult Education.

Shearon: Griffith and Hayes, *Adult Basic Education: The State of the Art.*

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ARTICLES

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Participation of the Adult Learner in Program Planning. *David McLoughlin.*

Educational Variables and Participation in Adult Education: An Exploratory Study. *Gary Dickinson.*

A Multi-Phasic Motivational Paradigm for Adult Education. *Dick Berry.*

ADULT EDUCATION FORUM

Adult Needs Today: The Fruits of Neglect. *David Carlton Williams.*

BOOK REVIEWS

Hayes: Davidson, *Family and Personal Development in Adult Basic Education: Curriculum Guide and Resource Units.*

Phifer: Wileden, *Community Development: The Dynamics of Planned Change.*

Kulich: Educatia Adultilor: Cercetare Stintifica Si Actiune Culturala.

Keim: Koos, *The Community College Student.*

ADULT EDUCATION REPORTS

Volume XXII, Number 2—Winter 1972, pp. 85-176

ARTICLES

The Development and Use of a Dropout Prediction Scale. *Roger Boshier.*

Continuing Education for the Aged: A Survey of Needs and Interests of Older People. *Roger P. Hiemstra.*

Selected Standardized Noncognitive Measures and Their Utility for the Disadvantaged. *Allen B. Moore.*

Differences in Perceptions of Program Planning Procedures. *Henry G. Brady* and *Huey B. Long.*

Teachers View Students: An Attitude Assessment through Personality Profiles. *William W. Kitchin.*

ADULT EDUCATION FORUM

Adult Education and Public Policy. *Francis A. Fay.*

BOOK REVIEWS

Treffman: Nadler, *Developing Human Resources.*

Robinson: Nunnery and Kimbrough, *Politics, Power, Polls, and School Elections.*

Kent: Levin and Slavet, *Continuing Education: State Programs for the 1970's.*

ADULT EDUCATION REPORT

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ARTICLES

Perseverance Versus Nonperseverance Patterns among Adult High School Students. *Caroll A. Londoner.*

Some Determinants of Citizen Attitudes toward Community Resource Development. *Robert C. Clark* and *Earl E. Timothy.*

Impact of the Black Experience on Attitudes toward Continuing Education. *Floyd L. Bass.*

ADULT EDUCATION FORUM

Tomorrow's Adult Educator—Some Thoughts and Questions. *Jerold W. Apps.*

BOOK REVIEWS

Tobin: Twente, *Never Too Old: The Aged in Community Life.*

Kaye: Eysenck: *The I. Q. Argument: Race, Intelligence, and Education.*

Washtien: Jensen, Liveright, Hallenbeck, *Adult Education: Outlines of an Emerging Field of University Study.*

Campbell: Warr, Bird, Rackham, *Evaluation and Management Training.*

Kelly: Kulich, *Adult Education in Continental Europe: An Annotated Bibliography of English-Language Materials, 1945-1969.*

ADULT EDUCATION REPORTS

Volume XXII, Number 4—Summer 1972, pp. 249-320.

ARTICLES

Effects of Participant Personality on Management Training Methods. *Howard A. Sulkin.*

Teacher-Student Correlates of Goal Expectations. *Carroll A. Londoner.*

Differences Between Content Conformity and Visual Conformity. *Huey B. Long.*

Professional Leadership vs. The Educational Service Station Approach: An Historical Appraisal. *Robert A. Carlson.*

BOOK REVIEWS

Blakely: Niemi, *Mass Media and Adult Education.*

Fay: Johnson, *From Riot to Reason.*

Medlin: Steiner, *The State of Welfare.*

Koos: Reed, *Jesse Parker Bogue: Missionary for the Two-Year College.*

ADULT EDUCATION REPORTS

Volume XXIII, Number 1—Fall 1972, pp. 1-84

ARTICLES

Freire, Conscientization and Adult Education. *Arthur S. Lloyd.*

Evaluating Basic Education for Adults: Some Economic and Methodological Considerations. *Myron Roomkin.*

The Mechanics' Institute—Education for the Working Man? *Michael Collins.*

Negotiated Accountability: A Method for Making Mutual Expectations Explicit. *Stewart B. Shapiro.*

ADULT EDUCATION FORUM

Toward a Broader Definition of Research. *Jerold W. Apps.*

BOOK REVIEWS

Otto: Cass, *Basic Education for Adults.*

Franklin: Cary, *Community Development as a Process.*

Steele: Miller, *Evaluating Faculty Performance.*

Seay: Irwin and Russell, *The Community Is the Classroom.*

THE CHAPEL HILL WORKSHOP REPORTS

Editor: ALAN KEITH-LUCAS

Associate Editors: MARJORIE L. FARADAY, SAMUEL R. FUDGE, H. CARL HENLEY, ERWIN H. PLUMER, CLIFFORD W. SANFORD

1971—Part I

WORKSHOP REPORTS

The Child Care Worker as Counsellor: Principles and Techniques. Section 1. Consultant: *Albert Trieschman,* pp. 1-6. Section 2. Consultant: *Mary Lee Nicholson,* pp. 6-7.

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